SUPPLEMENTAL GROUNDWATER INVESTIGATION REPORT

SOUTH CAVALCADE SUPERFUND SITE HOUSTON, TEXAS

Prepared For:

Beazer East, Inc.

One Oxford Centre, Suite 3000 Pittsburgh, Pennsylvania 15219-6401

Prepared by:

Key Environmental, Inc.

200 Third Avenue Carnegie, Pennsylvania 15106

March 1, 2006





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LIST OF ABBREVIATIONS/ACRONYMS

AOC Administrative Order on Consent

ARAR applicable and relevant and appropriate requirement

Beazer East, Inc.
bgs below ground surface
COC chain of custody
COI constituents of interest

DNAPL Dense Non-Aqueous Phase Liquid

DO dissolved oxygen

GESPMP Groundwater Extraction System Performance Monitoring Plan

GFTER Groundwater Fate and Transport Evaluation

GRAA Groundwater Remedial Action Area HCTRA Harris County Toll Road Authority

IDW investigation derived waste KEY Key Environmental Inc. Koppers Company Inc.

MNA Monitored Natural Attenuation
NAPL Non-Aqueous Phase Liquid
NPL National Priorities List
ORP oxidation-reduction potential
PID Photoionization Detector
PPE personal protective equipment

PVC polyvinyl chloride

RAWP Remedial Action Work Plan

RD/RA Remedial Design and Remedial Action

RDWP Remedial Design Work Plan

ROD Record of Decision

SITE South Cavalcade Superfund Site

SOW Scope of Work

STL Severn Trent Laboratory

TCEQ Texas Commission on Environmental Quality

TDWR Texas Department of Water Resources

TOC Total Organic Carbon

USCS Unified Soil Classification System

USEPA United States Environmental Protection Agency

VGFTER Verification of Groundwater Fate and Transport Evaluation Report

VOCs Volatile Organic Carbons



SECTION 1.0

1.0 INTRODUCTION

This report was prepared on behalf of Beazer East, Inc. (Beazer) and presents the results of the supplemental groundwater characterization conducted for the shallow and intermediate groundwater-bearing units at the South Cavalcade Superfund Site located in Houston Texas (Figure 1-1). The scope of the field investigation was developed through a series of meetings and communications among representatives of Beazer, U.S. Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ).

The scope of the investigation was discussed with EPA and TCEQ during a meeting in Houston on April 5, 2005 and concurrence regarding the scope of work was achieved. At the meeting, EPA requested that Beazer prepare a brief workplan describing the scope of the investigation and the methodologies to be utilized for its implementation. The workplan was originally submitted to EPA in May 2005. Following receipt of comments from EPA and TCEQ, the workplan was revised to address the comments and resubmitted and subsequently approved on August 17, 2005. Field work was conducted in September 2005. The results of the investigation were presented to and discussed with EPA and TCEQ at a meeting on December 12, 2005. During the meeting, the content of this report was discussed and agreed upon.

The following section (Section 2.0) presents the project objectives. Project background information, including site description, site groundwater remedial history, conceptual model and summary of the operation of the DNAPL recovery system, are included as Section 3.0. Section 4.0 includes a discussion of the implementation of the scope of work. The results of the investigation are presented in Section 5.0 and conclusions and recommendations are included in Section 6.0.



SECTION 2.0

2.0 PURPOSE

The overall purpose of this investigation was to provide additional data to support re-evaluation of the current groundwater remedy for the Site to include a Monitored Natural Attenuation (MNA) component. The specific project objectives were as follows:

- To further define groundwater migration pathways for the shallow and intermediate aquifers, as they pertain to contaminant distributions;
- To refine the delineation of the dissolved phase plume in the area southwest of the Site; and,
- To provide additional data and information to support the design of a MNA monitoring network.

The investigation of the shallow and intermediate zones targeted potential preferential pathways for migration of impacted groundwater from the potential source areas at the Site, as identified through separate analyses of site-specific geologic information performed by Beazer and EPA and as agreed upon during a September 8, 2004 meeting.

As discussed with the EPA and TCEQ during the December 12, 2005 meeting, the content of this report was expanded to include an evaluation of the DNAPL recovery record and presentation of the technical basis for discontinuing recovery, if appropriate.



SECTION 3.0

3.0 SITE BACKGROUND

3.1 SITE DESCRIPTION

This description is largely excerpted from the Verification of Groundwater Fate and Transport Evaluation Report (VGFTER; KEY, 2000). The Site includes approximately 66 acres of urban land located approximately three miles north of downtown Houston, Texas. It is rectangular in shape and is approximately 3,400 feet in the north-south direction by 900 feet in the east-west direction. The Site was operated as a wood treating plant from 1910 until 1962. Creosote and various metal salts were used as the wood preservatives. The wood treating process area was located in the southern portion of the Site along Collingsworth Street. Koppers Company, Inc. (Koppers) operated the wood treating facility from 1940 until its closure in 1962. A coal tar distillation plant was also operated by Koppers on the southeastern portion of the Site from about 1944 until 1962.

The Site is currently occupied by three trucking firms and much of the ground surface is covered by concrete or asphalt pavement, or buildings, as shown on Figure 3-1. The ground surface is also covered in an area where Beazer constructed a concrete cap to cover soil that exceeds the remedial goal specified in the Record of Decision (ROD) for the Site. The central portion of the Site is for the most part undeveloped. However, one of the trucking firms recently expanded its operations into the western portion of the central area. A groundwater treatment facility is located along the eastern Site boundary in the central portion of the Site.

Land use in the vicinity of the Site is a mixture of commercial, industrial and residential. Industrial and commercial properties are located to the east and across Collingsworth Street to the south of the Site. The North Cavalcade Superfund Site, which is also the location of a former wood treating facility, is located directly across Cavalcade Street to the north. Active rail lines immediately border the Site to the east and west. The nearest residences are located several hundred feet west of the Site. The Harris County Toll Road Authority (HCTRA) is planning an extension of the Hardy Toll Road which will border the western Site boundary. As a result, the HCTRA is in the process of acquiring the railroad right-of-way and certain residential properties to the west of the Site.

3.2 SUMMARY OF GROUNDWATER REMEDIAL HISTORY

The following timeline is summarized from the VGFTER (KEY, 2000) and also includes more recent work:

1983 - The Houston Metropolitan Transit Authority investigated the Site for potential use in the municipal mass transit system. Results of this investigation indicated localized areas of potential impact and the Site was subsequently referred to the Texas Department of Water Resources (TDWR).

April 1984 - TDWR recommended to USEPA that the Site be placed on the National Priorities List (NPL). In October 1984, USEPA proposed that the Site be added to the NPL.



March 1985 - Koppers entered into an Administrative Order on Consent (AOC) to conduct a Remedial Investigation/Feasibility Study (RI/FS) at the Site.

June 1986 - The Site was formally added to the NPL.

August 1988 - The RI/FS was completed by Koppers. The Remedial Investigation (Keystone Environmental Resources, July 1988) and Feasibility Study Reports (Keystone Environmental Resources, August 1988) were submitted to USEPA.

September 1988 - A ROD was issued by USEPA which presented the selected remedial alternatives for Site soil and groundwater. The selected remedial groundwater alternative included extraction and treatment of groundwater containing constituent concentrations greater than the remedial goals specified in the ROD. The ROD stipulated that "groundwater collection will continue until constituents have been recovered to the maximum extent possible", as "determined during the Remedial Action, based upon experience in operating the groundwater collection and treatment system." The ROD specified that once USEPA had determined that groundwater constituents have been recovered to the maximum extent possible, groundwater collection would cease and any remaining constituents would be allowed to naturally attenuate to background levels. The ROD also indicated that the groundwater could be remediated via in situ biological treatment if equal performance was demonstrated.

May 1990 - A detailed Statement of Work for the South Cavalcade Site (SOW) was completed by Bechtel Environmental, Inc. (Bechtel) on behalf of Beazer. The SOW described the remedial design and remedial action (RD/RA) activities to be performed by Beazer including pilot study tasks to support the design of the selected remedies.

March 1991 - Beazer entered into a Consent Decree with USEPA for implementation of the RD/RA activities specified in the SOW. The SOW was subsequently incorporated into the USEPA-approved Remedial Design Work Plan (RDWP) prepared by Bechtel on behalf of Beazer, dated March 1992.

October 1993 - Pilot study tasks were completed. A 100% Design Groundwater Collection and Reinjection System and Dense Non-Aqueous Phase Liquid (DNAPL) Recovery System Report was prepared by McLaren/Hart Environmental Engineering Corporation on behalf of Beazer. The Final (100%) Remedial Design Report was submitted to U.S. EPA in December 1994, and was subsequently approved.

June 1995 - Construction of the groundwater remedial action was initiated, in accordance with a USEPA-approved Remedial Action Work Plan (RAWP) dated May 1995 and associated support documents. One DNAPL recovery well (RWN-4) and four groundwater collection wells (RWN-1, RWN-2, RWN-3 and RWN-5) were installed within Groundwater Remedial Action Area (GRAA) 1 located in the north section of the Site. One DNAPL recovery well (RWS-5) and three groundwater collection wells (RWS-3, RWS-4, and RWS-6) were installed within GRAA



2, which includes the area formerly occupied by the coal tar distillation plant. Two combined groundwater collection/DNAPL recovery wells (RWS-1 and RWS-2) were installed within GRAA 3, which includes the area formerly occupied by the wood treating process area.

September 1995 - Start-up of the groundwater collection and DNAPL recovery components of the groundwater remedy was conducted, following completion of modifications to the groundwater treatment plant.

October 6, 1995 - USEPA prepared a letter to Beazer stating that "there is some question as to whether USEPA will continue to apply the current remedial action goals [i.e., the remedial goals specified in the ROD issued in 1988] to groundwater cleanup." This direction was taken in response to a July 31, 1995 USEPA memorandum directing a policy favoring applicable and relevant and appropriate requirement (ARAR) waivers at sites where it is technically impracticable to remediate groundwater to Federal or State standards. Consequently, and in accordance with an agreement between USEPA and Beazer, groundwater collection and treatment was delayed pending determination of the potential inapplicability of the groundwater remedial goals specified in the ROD. Operation of the DNAPL recovery component of the groundwater remedy continued, and is currently ongoing.

January 1996 – Passive operation of the DNAPL recovery system (i.e. collection of DNAPL without groundwater pumping to increase hydraulic gradients) was initiated in accordance with the USEPA-approved 100% Remedial Design. Evaluation of the DNAPL recovery data collected through June 1996 indicated that DNAPL had been recovered to the "maximum extent possible" under the passive mode of operation. As a result and in accordance with the USEPA-approved 100% Remedial Design, DNAPL recovery, with groundwater extraction to enhance hydraulic gradients, was initiated in one GRAA (GRAA 3) to evaluate effectiveness. Evaluation of data through September 1996 indicated that groundwater extraction (at a pumping rate of 0.3 gallons per minute [gpm] appeared to enhance DNAPL recovery in Wells RWS-1 and RWS-2. Based on this observation, DNAPL recovery with groundwater extraction was initiated in GRAAs 1 and 2 in October 1996. Beazer continues operation of the DNAPL Recovery System in the gradient enhanced mode.

August 5, 1997 - Beazer submitted a revised Groundwater Fate and Transport Evaluation Report (GFTER) to the USEPA for review and approval. The fate and transport modeling presented in the GFTER-was completed by Beazer as a preliminary evaluation of whether natural attenuation processes are sufficient to meet the remedial objectives for shallow groundwater at the South Cavalcade Site. The results of the GFTER supported a preliminary hypothesis that effective natural attenuation of dissolved organic constituents of interest (COI) is occurring in the shallow groundwater zone at the Site. The GFTER was approved by the USEPA on August 14, 1997.

July 31, 2000 - Beazer submitted a study pursuant to the Work Plan for Verification of the Groundwater Fate and Transport Evaluation (VGFTER) which had been reviewed and approved by the USEPA. The Verification of the Groundwater Fate and Transport Evaluation Report (VGFTER) presented the results of a rigorous site investigation to further evaluate the MNA



conclusions of the GFTER. The results of the VGFTER supported the conclusion of the GFTER modeling that an MNA remedy is feasible for dissolved phase COIs in shallow groundwater at the South Cavalcade Site. The EPA concluded its review of the VGFTER in July 2003. Subsequent to the VGFTER, Beazer and USEPA have completed thorough evaluations of historic site data and information to ensure that all Site source areas and potential preferential pathways have been identified and investigated.

March 1993 to present - In addition to the ongoing DNAPL recovery operation, Beazer has conducted annual groundwater monitoring in two deeper monitoring wells located in the vicinity of the Site, as stipulated in the RDWP. One well monitors the "200-Foot Sand" aquifer at a depth of approximately 220 feet below ground surface and the other well monitors a deeper sand unit at approximately 500-feet below ground surface. The results of this monitoring show that these groundwater-bearing units have not been impacted by site-related constituents.

3.3 CONCEPTUAL SITE MODEL

A detailed Site conceptual model was developed and presented in Section 2.0 of the GFTER. An overview of the Site conceptual model presented in the GFTER is presented in the following paragraphs, to facilitate an understanding of existing Site conditions pertinent to the supplemental groundwater characterization.

The COIs have been detected in groundwater within the shallow fluvial-deltaic deposits, comprising intermittent, interbedded fine sand, silt, and clay that extend from the ground surface to a maximum depth of approximately 22 ft-bgs and the underlying discontinuous sand unit (referred to as the intermediate zone in the 100% Remedial Design), which lies at a depth of 40 to 50 feet-bgs. The water table typically occurs within the shallow zone at a few feet below the ground surface. Groundwater flow within the shallow zone is generally in a westerly direction. Aquifer testing results indicate average horizontal hydraulic conductivities for the shallow zone for the northern and southern sections of the Site are 7.8 x 10⁻³ cm/sec (8,070 ft/year) and 1.6 x 10⁻³ cm/sec (1,655 ft/year), respectively. Horizontal hydraulic gradients in the shallow zone are relatively flat ranging from 1.76 x 10⁻³ to 5.88 x 10⁻³ ft/ft.

Groundwater flow within the intermediate zone appears to be also to the west, although hydraulic gradients have been noted to be relatively small and somewhat variable. Horizontal hydraulic conductivity values for the intermediate zone were determined through pumping tests performed during the remedial design. The average hydraulic conductivities, calculated using drawdown data from the piezometers monitored during the tests, for the intermediate zone in the northern and southern areas are 3.9×10^{-4} cm/s and 3.2×10^{-4} cm/s, respectively. The hydraulic connection between the intermediate and shallow zones appears to be negligible as indicated by the lack of drawdown in the shallow wells during these tests.

A downward vertical hydraulic gradient has been measured between the shallow aquifer and the intermediate zone. The potentiometric surface elevations for the intermediate zone are roughly 10 feet lower than the shallow zone water table elevations. The significant difference in



potentiometric surface elevations is also consistent with limited hydraulic connectivity between the two zones.

The COIs have been identified to be Polynuclear Aromatic Hydrocarbon (PAH) compounds and benzene, toluene, ethylbenzene and xylene (BTEX) based on the analytical results of groundwater samples collected from within the shallow and intermediate zones. These constituents are typical COIs for sites where wood treating operations have been conducted using creosote as a preservative.

The source areas for these COIs are the locations at the Site where DNAPL has been observed as a separate phase in monitoring wells or visually observed during completion of soil borings. Figure 3-2 shows the inferred extent of DNAPL in the shallow and intermediate zones. No addition to, or movement of, DNAPL is anticipated over time, due to the strong indications that the DNAPL has achieved a static distribution within the subsurface and the fact that 44 years have elapsed since wood treating was conducted at this Site. However, the areas containing immobile free-phase or residual DNAPL are anticipated to be a long term source for dissolved phase COIs within shallow groundwater.

COIs dissolve from the DNAPL into the groundwater as a function of the effective solubilities. Migration of COIs occurs in the general groundwater flow direction due to dispersion and advection. Attenuation mechanisms such as dispersion, adsorption and biodegradation cause COI concentrations to decrease with migration away from the source. These factors combine to effectively limit the distance that dissolved COIs derived from a creosote source will migrate from the source area. A detailed evaluation of these natural attenuation processes has been conducted in the GFTER and VGFTER and is summarized in Section 3.4.

Consent agreements between EPA and the respective on-Site property owners prohibit use of the Site for residential purposes. The consent agreements between EPA and the respective property owners also prohibit on-Site groundwater use. The potential for Off-site use of groundwater in the shallow and intermediate zone is virtually non-existent for the following reasons:

- Water in the local area is supplied by the municipal system and evaluation done as part of the VGFTER showed that use of water from the municipal supply is more cost-effective than the installation and operation of a private well;
- The quality of shallow groundwater is poor due to naturally occurring conditions;
- Groundwater yield from the shallow and intermediate zones are expected to be low; and,
- The HCTRA plans to construct a highway along the western Site boundary and HCTRA has acquired several properties within this area for right-of-way purposes.

3.4 GFTER/VGFTER

The GFTER was initiated in response to a fundamental change in USEPA's approach to groundwater remediation at sites where it is impracticable to remediate Groundwater to Drinking Water Standards. These programmatic changes were outlined in a Memorandum dated July 31,



1995 from USEPA Assistant Administrator Eliot Laws. In a subsequent letter to Beazer (USEPA, Oct. 6, 1995, Letter from Glenn Celerier to Michael Slenska, Beazer), USEPA indicated the following implications for the South Cavalcade Site: "There is some question as to whether EPA will continue to apply the current remedial action goals to groundwater cleanup. Therefore, should Beazer request, we will consider modifying the May 1995 Remedial Action Work Plan (RAWP) to delay groundwater extraction and treatment until further notice."

In response to this letter, as well as fundamental concerns regarding the practicability of the groundwater remedial action goals for the Site, Beazer with the approval of EPA, initiated the GFTER, to evaluate MNA as a possible alternative to the remedial alternative selected in the ROD. The overall objective of the GFTER and the subsequent VGFTER was to assess whether any realistic potential risk to human health and the environment exists currently, or in the future, with respect to reasonable potential exposure to dissolved constituents in shallow zone groundwater. The GFTER was conducted using available data to formulate lines of evidence for preliminary assessment of MNA feasibility. It involved predictive analytical fate and transport modeling to demonstrate an understanding of natural attenuation and its role in controlling COI migration. Rates of COI degradation were estimated with the model and extrapolation of these rates indicated that dissolved phase COI distributions were stable.

The GFTER provided a preliminary indication of MNA feasibility and the VGFTER was conducted to evaluate more lines of MNA evidence. The VGFTER Work Plan was reviewed and approved by USEPA, and the field program was implemented in November/December 1999, with supplemental work completed in April and June 2000. The primary and secondary lines of MNA evidence that were evaluated in the VGFTER were supported by the following sampling and information gathering activities:

- Sampling to verify the parameter values used in the GFTER analytical modeling;
- Monitoring of hydraulic gradients and groundwater flow directions;
- Sampling to characterize organic carbon concentrations in the aquifer matrix to evaluate COI sorption;
- Evaluation of the physical properties of the aguifer matrix;
- Evaluation of DNAPL physical and chemical properties;
- Assessment of the potential for future groundwater use in the vicinity of the site;
- Sampling to define the plume core and central axis;
- Sampling to characterize electron acceptors and metabolic by-products;
- Sampling to characterize microbial capabilities regarding COI biodegradation; and,
- Sampling to characterize total organic carbon in groundwater, to evaluate for the accumulation of COI daughter product.

A summary of the key conclusions from the VGFTER were as follows:

• The model parameters used in the GFTER were adequately representative of Site conditions;



- Monitor well locations used to assess the GFTER modeling were representative of conditions within the plume core and therefore were appropriate for MNA evaluation;
- COI concentrations at downgradient locations were consistent with GFTER predictions and therefore were supportive of MNA feasibility;
- No other significant dissolved plumes exist on the Site. Therefore the dissolved COI distributions that were the focus of the MNA evaluation were the most extensive
- Natural attenuation is occurring at the site and an MNA remedy is feasible and appropriate.

The evaluation of primary and secondary lines of MNA evidence in the GFTER and VGFTER led to the overall conclusion that exposure potential to dissolved phase COIs in shallow groundwater was negligible. Accordingly, Beazer recommended in the VGFTER that an MNA monitoring program should be developed and implemented.

3.5 DNAPL RECOVERY

As mentioned in Section 3.2, Beazer continues to operate four DNAPL recovery wells on the Site (RWS-1, RWS-2, RWN-4, and RWS-5) at the locations shown on Figure 3-2. DNAPL recovery is enhanced by groundwater pumping. The cumulative DNAPL recovery record for these wells is shown in Figures 3-3 through 3-6, and the total recovery record for the Site is shown in Figure 3-7. A summary of DNAPL and groundwater recovery as of December 2005 is provided below.

DNAPL	Total DNAPL	% DNAPL	Groundwater
Recovery Well	Recovered (gal)	Recovered	pumping rate
			(gpm)
RWS-1	1742	44.8	0.3
RWS-2	335	8.6	0.3
RWS-5	87	2.2	1
RWN-4	1722	44.3	0.3
TOTAL	3886	100	1.9

Figure 3-7 shows that the rate of total DNAPL recovery over time is decreasing. The maximum recovery rate was approximately 1.92 gpd, and it occurred in 1998 and 1999. Subsequently, the rate decreased to approximately 1.05 gpd, and the average rate in recent years was approximately 0.84 gpd.

These trends indicate that the overall rate of DNAPL recovery is decreasing and, therefore, that the effort per unit volume of DNAPL recovered is increasing. On this basis, Beazer considers that there is minimal benefit in continuing the DNAPL recovery operation. It is also noted that DNAPL recovery has little benefit in terms of dissolved phase migration, because a residual DNAPL component is retained in the formation and will continue as an ongoing source for an indefinite period. The various fate and transport studies conducted at the Site indicate that the



potential for exposure to the dissolved phase plume is negligible, regardless of DNAPL recovery efforts.

A further consideration for discontinuing DNAPL recovery is the potential effect of discontinuing groundwater pumping. As noted above, DNAPL recovery is enhanced by a relatively low pumping rate of 1.9 gpm distributed across the four widely-spaced DNAPL recovery wells at the Site. The discontinuation of this groundwater recovery component is expected have a minimal effect on dissolved phase migration, for the following reasons:

- The total pumping rate is relatively small and is applied over a large area.
- The downgradient areas of the dissolved phase source zones are not hydraulically affected by the wells. Consequently, the migration of dissolved phase COIs away from these source zone areas will be similar, with or without groundwater recovery.
- The groundwater flow rates at the Site are relatively low, particularly in the south end of the Site. For example, with the hydraulic gradient and conductivity values used in the GFTER, the ambient groundwater flow rate in the south end is estimated to range between 1.7 and 14 ft/yr. At this low rate, it is noted that the existing extent of the dissolved phase plume has not been significantly influenced by groundwater pumping. The current extent is more indicative of pre-pumping conditions since the plume front would have migrated away from the source several years ago.

In summary, Beazer considers that the DNAPL recovery operation produces negligible environmental benefit and therefore should be discontinued. The effect of discontinuing the DNAPL and associated groundwater recovery operations is expected to be insignificant with regard to migration, extent and exposure potential for dissolved phase COIs in groundwater.



SECTION 4.0

4.0 SCOPE OF WORK AND FIELD METHODS

4.1 SOIL BORINGS

Six soil borings were completed into the shallow zone and ten into the intermediate zone as shown on Figure 4-1. Soil borings were advanced into the subsurface using direct push techniques (e.g., Geoprobe[®]) by Advanced Drilling Systems, a licensed driller in the state of Texas. A continuous soil core was collected from all of the borings. The soil was classified by the field geologist according to the Unified Soil Classification System (USCS) and observations were made of NAPL presence, odor, color, and qualitative degree of saturation. Draft logs were reviewed daily to allow for real-time evaluation of the need for step-out boring locations. Soil boring logs are provided in Appendix A.

Each soil core was scanned along its length with the Photoionization Detector (PID) to identify the occurrence of volatile organic compounds (VOCs). One soil sample of relatively coarse-grained strata was collected from each intermediate zone boring, for analysis of Total Organic Carbon (TOC) content via the Walkley-Black Method. Following the completion of each soil boring, all downhole equipment was thoroughly cleaned by washing all surfaces with an Alconox® (or equivalent) solution and rinsing with potable water.

4.2 TEMPORARY WELL INSTALLATION

Temporary monitoring wells were installed in each of the soil borings (6 shallow and 10 intermediate) and construction details are summarized in Table 4-1. The wells were installed by placing one inch PVC casing and screen into the steel casing used for the direct push boreholes. The steel casing was then extracted, allowing the formation to collapse around the PVC well. The shallow wells were installed at depths ranging from 20 to 24 feet below ground surface (bgs) and set with their base at least six-inches below the interface between the shallow zone and the underlying clay. Screens were set to span the total thickness of the shallow zone sand, and varied from five to 15 feet in length.

The intermediate zone wells were installed at depths ranging from 48 to 64 feet (bgs). Well screens were set to span the total thickness of sandy intervals encountered in the intermediate zone, and ranged from five to 15 feet in length. Before installation of the intermediate zone wells, three inch PVC casing was installed and grouted into the clay layer underlying the shallow zone, to prevent cross contamination between the shallow zone and intermediate zone.

4.3 SITE WIDE GROUNDWATER MEASUREMENTS

Before sampling of existing wells, groundwater levels and apparent DNAPL thickness (if present) was measured using an electronic oil/water interface probe. Measurements were made at a precision of 0.01 foot. These data are summarized on Table 4-2.



4.4 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS

Groundwater samples were collected at each of the 16 temporary well locations (Figure 4-1) and 21 existing monitoring well or piezometer locations. Figures 4-2 and 4-3, respectively, show the locations of the existing shallow and intermediate zone monitoring wells and piezometers that were sampled. The Work Plan also included sampling of six additional existing wells, but these wells could not be sampled for the following reasons: 1) Wells MW-08, MW-09, MW-24, and MW-16 could not be located for various reasons, 2) Well MW-11 was damaged, and 3) Well MW-12R contained DNAPL.

The temporary wells were sampled using low flow micro-purging techniques and the following decision framework:

- A peristaltic pump was the preferred equipment for well purging and sample collection;
- If water level in the well dropped too low to use a peristaltic pump, then a bladder pump was used;
- If the water was too turbid to handle with a bladder pump, then a disposable bailer was used; and,
- If the well went dry during purging, it was allowed to recover and the sample was collected as soon as possible.

Groundwater samples were not collected from existing monitoring wells where DNAPL was detected. Of the wells schedule for sampling, only Well MW-12 contained a measurable thickness of DNAPL. Groundwater purging and sampling of existing wells was conducted using low flow methods, as described above.

Field parameters including temperature, pH, conductivity, turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were recorded at regular intervals during purging. These data are included on the Groundwater Sample Collection Record Forms included as Appendix B and in Table 4-4. Purge water was discharged into a bucket and was visually inspected for indications of hydrocarbon sheen. Groundwater samples were collected directly into prepreserved, laboratory supplied containers, and placed immediately on ice.

The coolers were prepared with sufficient packing material to protect the sample jars and bottles during shipment. Samples were shipped via Fed Ex to Severn Trent Laboratory (STL) Pittsburgh, Pennsylvania for analysis. A chain-of-custody (COC) form was completed by a KEY representative and accompanied the samples to the analytical laboratory (Appendix C). The samples were analyzed for benzene and naphthalene using USEPA SW-846 Method 8260B.

All non-dedicated downhole equipment (i.e. pumps, cable, and oil-water interface indicator) were decontaminated between sample locations by washing with Alconox® (or equivalent) solution, followed by a deionized water rinse. All purge water was discharged to the on-site water treatment facility.



4.5 SURVEY

Each temporary well location was surveyed relative to the Texas Coordinate System, South Central Zone, and the 1973 United States Coastal and Geodetic Survey adjustment of the 1929 mean sea level datum. The survey was conducted by Clark-Romero Corp, a licensed Texas surveyor. Survey data are provided in Table 4-3.

4.6 DECOMMISSIONING OF THE TEMPORARY WELLS

The temporary monitoring wells were decommissioned in accordance with Administrative Rules of the Texas Department of Licensing and Regulation 16 Texas Administrative Code, Chapter 76.1004: Technical Requirements – Standards for Capping and Plugging of Wells and Plugging Wells that Penetrate Undesirable Water or Constituent Zones.

The decommissioning procedure for the intermediate zone wells was as follows:

- The well screen and riser were removed from the borehole;
- The open borehole was grouted up to the bottom of the temporary casing, with a cement-bentonite mixture;
- The temporary casing was removed and the open borehole was grouted to the ground surface; and,
- Each location was restored with concrete, to original grade.

Temporary shallow zone monitoring wells were decommissioned as follows:

- The well screen and riser were completely removed from the borehole;
- The boreholes were sealed to the ground surface with a cement-bentonite grout; and,
- Each location was restored with concrete, to original grade.

4.7 INVESTIGATION DERIVED WASTE

Investigation derived waste (IDW) included soil cuttings, purged groundwater, decontamination fluids, disposable sampling materials, and personal protective equipment (PPE). All liquid IDW was discharged to the on-Site groundwater treatment system. All solid IDW was contained in labeled, steel 55-gallon drums which was subsequently disposed off-site at a permitted facility. Sample tubing and PPE (gloves, etc.) from the investigation were placed in bags, tied up, and stored at the Site. PVC well material was cut in 3-5 foot lengths, placed in bags, and disposed off-site at a permitted facility.



SECTION 5.0

5.0 RESULTS

5.1 SITE GEOLOGY

Geologic information from the current program was used in conjunction with previous information to develop the geologic cross sections shown in Figures 5-1, 5-2, and 5-3. The geologic information acquired through the field investigation is consistent with the previous understanding of Site geology.

5.2 GROUNDWATER FLOW

Figures 5-4 and 5-5 present groundwater potentiometric contours for the shallow and intermediate zones, respectively, based on measurements from September 16-17, 2005. Groundwater flow direction in the shallow zone was consistent with previous work, and is generally from east to west. Groundwater flow direction in the intermediate zone is also generally to the west, but the flow field is more convoluted than the shallow zone, probably due to the discontinuous nature of the intermediate zone sand layers.

5.3 TOTAL ORGANIC CARBON IN INTERMEDIATE ZONE AQUIFER MATRIX

Soil samples were collected from sandy horizons at 10 locations within the intermediate zone. Analysis was conducted for Total Organic Carbon (TOC) by the Walkley-Black Method to evaluate the sorptive capacity of the material. The results are shown in Table 5-1 and indicate that TOC was not detected in the intermediate zone samples. This result is considered suspect, because experience has shown that while the TOC of sandy material is typically low, it is almost always detectable. These samples were not re-run due to the absence of significant dissolved phase concentrations in intermediate zone groundwater samples.

5.4 GROUNDWATER QUALITY

A total of 16 temporary wells and 21 existing wells were sampled from September 14-20, 2005. Samples were analyzed for benzene and naphthalene by USEPA Method 8260B. Analytical data are provided in Table 5-2.

Shallow Zone

Groundwater results for the shallow zone are shown on Figure 3-7. Results from temporary shallow zone wells were all below the ROD remedial goal of 5 ug/l for benzene and a tap-water based screening criterion of 6.2 ug/l for naphthalene (It must be noted that the naphthalene screening level is only referenced herein to facilitate the discussion on groundwater analytical results. It should not be construed that this criterion is an enforceable standard or otherwise applicable to this site). Some of the groundwater results from existing shallow monitoring wells exceeded the naphthalene screening level only. The greater concentrations of constituents were all detected in the immediate vicinity of the previously identified shallow source zone locations, as shown on Figure 5-6.



These results are consistent with natural attenuation of site constituents within a relatively short migration distance away from the source zone. They provide delineation of the extent of impact to the southwest of the Site and they indicate the absence of significant constituent migration along the potential shallow zone migration pathways targeted in this investigation. Where existing wells had been sampled previously, the current results are consistent with previous data.

Intermediate Zone

Groundwater results from the intermediate zone are shown on Figure 5-7. Results from temporary intermediate zone wells were all below the ROD remedial goal of 5 ug/l for benzene and the tap-water based screening criterion of 6.2 ug/l for naphthalene. Six of the seven permanent intermediate zone monitoring wells exceeded the naphthalene screening criterion and one exceeded the remedial goal for benzene.

Similar to the shallow zone samples, the greater concentrations of constituents were all detected in the immediate vicinity of the previously identified intermediate zone source zone locations, as shown on Figure 5-7. These results are consistent with natural attenuation within a relatively short migration distance from the source zones. They also indicate the absence of significant constituent migration along the potential intermediate zone migration pathways targeted in this investigation. Where existing wells had been sampled previously, the current results are consistent with previous data.



SECTION 6.0

6.0 CONCLUSIONS/RECOMMENDATIONS

The results from the Supplemental Groundwater Characterization are summarized according to the specific project objectives presented in Section 2.0.

Investigate Potential Preferential Pathways — Benzene concentrations were less than the ROD remedial goal and naphthalene concentrations were less than a tap-water based screening criterion in all temporary well groundwater samples. These results conclusively indicate that significant constituent migration is not occurring within the targeted potential migration pathways in the shallow zone and the intermediate zone.

Delineate Shallow Groundwater Impacts to the Southwest of the Site – Benzene concentrations were less than the ROD remedial goal and naphthalene concentrations were less than a tap-water based screening criterion in all temporary well groundwater samples collected in the area to the southwest of the Site. The goal of completing delineation in this area has therefore been accomplished.

Provide Additional Data for Design of MNA Program - The additional data acquired through this investigation will greatly aid the development of an effective MNA program. The results confirm that the dissolved phase COI distributions are limited to within a relatively short distance of the source areas. The data have also increased the precision to which the source areas and dissolved plumes are delineated.

The results of this Supplemental Groundwater Characterization support the earlier recommendation in the VGFTER for the incorporation of a MNA component into the groundwater remedy for the Site. Therefore, Beazer recommends that a MNA groundwater monitoring program be developed and implemented for the Site. From an administrative perspective, EPA will need to determine whether an amendment to the ROD is necessary to formally change the groundwater remedy and groundwater remedial goals



SECTION 7.0

7.0 REFERENCES

Administrative Rules of the Texas Department of Licensing and Regulation 16 Texas Administrative Code, Chapter 76:1004: Technical Requirements – Standards for Capping and Plugging of Wells and Plugging Wells that Penetrate Undesirable Water or Constituent Zones

Bechtel Environmental, Inc., May 1990. Detailed Statement of Work for South Cavalcade Site, Houston, Texas.

Key Environmental Inc., August 1997, Groundwater Fate and Transport Evaluation, South Cavalcade Superfund Site, Houston, Texas

Key Environmental Inc., July 31, 2000, Verification of Groundwater Fate and Transport Evaluation, South Cavalcade Superfund Site, Houston, Texas

Key Environmental Inc. August 2005, Supplemental Groundwater Characterization Work plan, South Cavalcade Superfund Site, Houston, Texas

Keystone Environmental Resources, Inc., July 1988. Final Report - Remedial Investigation, South Cavalcade Site, Houston, Texas.

Keystone Environmental Resources, Inc., August 1988. Feasibility Study, South Cavalcade Site, Houston, Texas.

U.S. EPA, 1988 Record of Decision (ROD) for South Cavalcade Site



TABLES



TABLE 4-1 TABLE 4-1 TEMPORARY WELL CONSTRUCTION DETAILS SUPPLEMENTAL GROUNDWATER CHARACTERIZATION SOUTH CAVALCADE SUPERFUND SITE HOUSTON, TEXAS

Boring Location	Drilling Complete Date	Total Depth (ft-bgs)	Sand/Silt - Intervals (ft-bgs)	Clay Intervals (ft-bgs)	Depth to Saturation (ft-bgs)	Temp Monitoring Well- Screen Interv. (ft-bgs)	NAPL Product/Sheen/Odor - and Interval	Sample Results ug/l	COMMENTS* Field Observations
TW-5-1	9/12/2005	20	5-18.9	18.9-25	8	5-15	NONE	Benzene - <0.13 Naphthalene - <0.26	
TW-6-2	9/15/2005	20	10-17	2-10 17-20	7.8	7.75-17.75	NONE	Benzene - <0,13 Naphthalene - 0,54 J	
TW-9-1	9/14/2005	25	23-25	18-23	11.8	9-24	NONE	Benzene - <0.13 Naphthalene - <0.26	
TW-9-2	9/13/2005	20	15-16	2-15 16-20	15	13.5-18.5	NONE	Benzene - <0.13 Naphthalene - <0.26	Pumped dry on 9/14/05
TW-10-2	9/12/2005	20	2-5	5-20	15	10-20	NONE	Benzene - <0.13 Naphthalene - <0.26	
TW-11-1	9/14/2005	25	11-12.75 14-22.25	12.75-14 22.25-25	7.2	12.2-22.2	NONE	Benzene - <0.13 Naphthalene - 5.6	
TW-1-1	9/15/2005	55	1.5-19.6 29.8-30 38-40	19.6-38 40-55	12	29-44	NONE	Benzene - 0.19 J Naphthalene - <0.26	Set 3" Casing to 25' on 9/13/05 Pumped dry on 9/17/05
TW-2-1	9/16/2005	50	8-23 42-45	3-8 23-42 44.5-50	8	38.8-43.8	NONE	Benzene - 0.34 J Naphthalene - <0.26	Set 3" Casing to 25' on 9/15/05
TW-3-1	9/14/2005	65	0.5-24 49-63.5	24-49 63.5-65	10	49-64	NONE	Benzene - 0.16 J Naphthalene - <0.26	Set 3" Casing to 25' on 9/12/05
TW-3-2	9/14/2005	60	1-8.2 10-24.5 45-58.5	24.5-45 58.5- 60	7	44-59	NONE	Benzene - <0.13 Naphthalene - <0.26	Set 3" Casing to 25' on 9/12/05
TW-4-1	9/16/2005	55	0-5 10.5-14 41-54	5-10.5 14-41 54-55	10.5	40-55	NONE	Benzene - <0.13 Naphthalene - <0.26	Set 3" Casing to 25' on 9/15/05
TW-4-2	9/16/2005	55	0-6.5 11-19 45-54	6.5-11 19-45 54-55	11	45-55	NONE	Benzene - <0.13 Naphthalene - <0.26	Set 3" Casing to 25' on 9/15/05 Pumped dry on 9/18/05
TW-6-1	9/17/2005	58	10-17 53.8-57	2-10 17-53 57-58	7.8	52.75-57.75	NONE	Benzene - <0.13 Naphthalene - <0.26	Set 3" Casing to 25' on 9/15/05
TW-7-1	9/16/2005	50	13-17.5 39.75-48	2.5-13 19.75-39.75 48-50	17.5	38-48	NONE	Benzene - <0.13 Naphthalene - <0.26	Set 3" Casing to 25' on 9/15/05
TW-8-1	9/14/2005	52	10-14 15-20 40-52	20-34 38-40	34	32-52	NONE	Benzene - <0.13 Naphthatene - <0.26	Set 3" Casing to 25' on 9/12/05
TW-10-1	9/13/2005	55	47-54	21.5-47	54	44-55	NONE	Benzene - 0.13 J Naphthalene - <0.26	Set 3" Casing on 9/12/05

Notes: J = Estimated Concentration ft-bgs + Feet Below Ground Surface

TABLE 4-2 DEPTH TO GROUNDWATER AND APPARENT DNAPL THICKNESS MEASUREMENTS SEPTEMBER 2005 SUPPLEMENTAL GROUNDWATER CHARACTERIZATION SOUTH CAVALCADE SUPERFUND SITE HOUSTON, TEXAS

Piezometer/ Manitoring Well	ZONE	Date	Time	Measuring Point Elevation (ft-msl)	Depth to Water (ft-toc)	Total Depth (ft-toc)	Apparent DNAPL Thickness (feet)	Groundwater Potentiometric Surface Elevation (ft-msl)
MW-01	shallow	9/16/2005	1323	54.11	10.79	16.30	0	43.32
MW-02	shallow	9/17/2005	0910	53.79	9.65	23.70	0_	44.14
MW-03	shallow	9/16/2005	0942	52.04	7,41	27.64	0	44.63
MW-04	shallow	9/16/2005	1050	49.71	4.43	24.87	Trace on probe	45.28
MW-05	shallow	9/16/2005	0912	53.55	11.16	24.28	0	42.39
MW-06	shallow	9/17/2005	0739	48.83	5.09	23.15	0	43.74
MW-07	shallow	9/16/2005	0950	52.89	7.67	30.73	0	45.22
MW-08	shallow	9/16/2005		48.79	Unable to locate			-
MW-09	shallow	9/16/2005			Unable to locate:	Paved over		-
MW-24	shatlow	9/17/2005		51.99	Unable to locate			_
MW-25	shallow	9/16/2005	0926	51.72	10.22	18.01	0	41.50
MW-26	shallow	9/16/2005	0755	48.35	7,84	18.76	0	40.51
OW-01	shallow	9/17/2005	0940	52.37	5.39	17.09	0	46.98
OW-02	shallow	9/17/2005	0854	53.89	9.54	17.31	0	44.35
OW-07	shallow	9/16/2005	1243	54.64	10.57	19.49	0	44.07
OW-08	shallow	9/16/2005	1450	50.99	9.49	16.60	0	41.50
OW-09	shallow	9/17/2005	0733	52.56	8.40	16.92	0	44.16
OW-10	shallow	9/16/2005	0805	50,94	9.10	24.72	0	41.84
OW-11	shallow	9/17/2005	0751	51.75	6.10	21.30	0	45.85
OW-14	shallow	9/16/2005	1226	51.51	6.24	18.87	0	45.27
OW-17			1009	· · · · · · · · · · · · · · · · · · ·	6.81	24.42		
P-02N	shallow shallow	9/16/2005	0847	Not Surveyed	9.82	27.20	sheen 0.80	<u>-</u>
		9/17/2005		Not Surveyed		·		42.40
PZN-10	shatlow	9/17/2005	0833	51.03	7.85	20.16	0	43,18
PZN-11	shallow	9/17/2005	0828	51.11	7,96	20,15	0	43.15
PZN-20	shatlow	9/17/2005	0918	51,28	7.67	20.11	O	43,61
PZN-21	shallow	9/17/2005	0920	50.87	7.05	20.14	0	43,82
PZN-30	shallow	9/16/2005	1336	50.79	7.23	10.22	0	43.56
PZN-31	shallow	9/17/2005	1800	50.75	7.20	19.45	0	43.55
PZN-40	shallow	9/17/2005	0856	50.91	6.56	20.17	0	44.35
PZN-41	shallow	9/17/2005	0927	50.75	6.41	20.60	0	44.34
PZN-50	shallow	9/16/2005	1344	50.85	6.74.	20.19	0	44.11
PZN-51	shallow	9/17/2005	0912	52.76	6.90	20.17	0	45.86
PZS-10	shallow	9/17/2005	0B33	48,09	8.14	14.86	0	39.95
PZS-11	shallow	9/17/2005	0828	48.28	7.43	20.22	0	40.85
PZS-20	shallow	9/16/2005	1014	48.64	5.69	23.78	2.30	42.95
PZS-21	shallow	9/16/2005	1017	48.57	5,47	21,59	0	43.10
PZS-30	shallow	9/16/2005	1018	49,39	5.37	20.36	0	44.02
PZS-31	shallow	9/16/2005	1023	49.27	5.36	20.16	0	43.91
PZS-40	shallow	9/16/2005	1032	49.64	4.87	20.14	0	44.77
PZS-41	shallow	9/16/2005	1038	49.55	4.83	20.09	0	44.72
PZS-50	shallow	9/17/2005	0754	49.85	6.34	21.70	0.30	43.51
PZS-51	shallow			49.71	Unable to locate.	Well possibly under	Jersey Barrier	
PZS-60	shallow	9/17/2005	0806	51.64	5.92	19,60	0	45.72
PZS-61	shallow	9/17/2005	0801	51.57	5.62	20,11	0	45.95
MW-10	intermediate	9/16/2005	1525	53.67	21.14	47.43	0	32.53
	intermediate	9/16/2005				·	Unable to measure.	-
	intermediate	9/17/2005	0844	53.87	20.49	55.17	2.00	33.38
	intermediate	9/17/2005	0718	48,97	16.03	46.05	0	32,94
	intermediate	9/16/2005			Unable to locate: 1			•
	intermediate	9/16/2005			Unable to locate	!		-
OW-13	NA	9/16/2005		1	Unable to locate	i		
	intermediate	9/17/2005	0900	Not Surveyed	20.59	53,00	0	-
	intermediate	9/17/2005	0903	Not Surveyed	20.75	53.69	0	
OW-19	NA	9/16/2005	0303	Not Surveyed	Z0.75 Damaged	1 33.08		-
	intermediate	9/16/2005	1012			60.04	4.07	
:			1012	Not Surveyed	13.83	50.04	1,27	22 55
	intermediate	9/16/2005	1453	52.96	19.41	49.49	0	33.55
	intermediate	9/16/2005	0958	49.05	15.56	49.52	0	33.49
	intermediate	9/17/2005	0742	50.14	28.30	64.84	0	21,84
P-04	intermediate	9/16/2005	1238 0937	51.91 52.19	20,32	53,74 50.71	0 1	31.59 42.84
P-05	intermediate	9/17/2005			9.35			

TABLE 4-3 SUMMARY OF SITE SURVEY INFORMATION SUPPLEMENTAL GROUNDWATER CHARACTERIZATION SEPTEMBER 2005 SOUTH CAVALCADE SUPERFUND SITE HOUSTON, TEXAS

Location	Grid Northing ⁽¹⁾	Grid Easting ⁽¹⁾	Ground Elevation ⁽²⁾ (ft msl)
TW-1-1	734211.33	3157466.56	52.21
TW-2-1	733521.75	3157366.75	50.61
TW-3-1	733013.9	3158212.2	50.04
TW-3-2	733321.13	3158246.67	50.58
TW-4-1	732717.5	3157610.61	50.18
TW-4-2	732903.29	3157537.55	50.14
TW-5-1	733131.46	3157501.92	50.33
TW-6-1	731884.23	3157888.97	49.48
TW-6-2	731877.92	3157889.27	49.49
TW-7-1	731470.35	3157931.14	49.03
TW-8-1	731220.49	3157323.21	48.90
TW-9-1	730601.31	3157309.12	47.68
TW-9-2	730882.55	3157295.93	48.50
TW-10-1	730290.40	3157325.30	46.87
TW-10-2	730289.91	3157320.43	46.85
TW-11-1	730370.77	3157900.81	48.25

Notes:

ft-msl = Feet Mean Sea Level

- 1. Texas South Central State Plane Coordinate System Referenced to the North American Datum of 1973 and in units of feet.
- 2. National Geodetic Veritcal Datum of 1929 in units of feet.

TABLE 4-4 FIELD PARAMETER DATA SUPPLEMENTAL GROUNDWATER CHARACTERIZATION SOUTH CAVALCADE SUPERFUND SITE **HOUSTON, TEXAS**

Sample Location	Zone	Temperature (°C)	pH (S.U.)	Specific Conductivity (mS/m)	ORP (mV)	Turbidity (NTU)	D.O. (mg/L)
TW-5-1	Shallow	25.2	10.00	54.4	-306	>999	0.00
TW-6-2	Shallow	30.0	7.92	64	-30	>999	0.00
TW-9-1	Shallow	28.6	9.13	1	-178	>999	0.09
TW-9-2	Shallow	27.8	9.96	159	-71	>287	6.55
TW-10-2	Shallow	28.7	7.21	77.5	-78	>999	3.43
TW-11-1	Shallow	31.3	10.98	109	-496	>999	0.00
MW-01	Shallow	26.8	7.76	87.4 .	-131	0	3.01
MW-05	Shallow	25.1	7.64	76.8	4	0	0.00
MW-25	Shallow	30.5	7.11	75.6	-56	0	0.00
MW-26	Shallow	28.8	7.45	0.112	-200	0	0.00
OW-01	Shallow	24.3	10.52	51.1	-333	0	0.00
OW-08	Shallow	26.5	7.33	60.1	20	41.6	0.00
OW-09	Shallow	25.4	7.51	113	-37	0	0.00
PZN-20	Shallow	25.5	7.61	71.9	-175	0	0.00
PZN-30	Shallow	25.4	7.66	63.9	-166	0	0.00
PZN-50	Shallow	25.4	8.33	106	-202	0	0.00
PZS-30	Shallow	28.4	7.76	54.1	-250	0	0.00
PZS-40	Shallow	27.8	8.51	42.6	-191	0 .	0.00
PZS-60	Shallow	28.5	7.40	131	-156	39.9	0.00
TW-1-1	Intermediate	29.0	7.17	170	-1000	450	0.00
TW-2-1	Intermediate	37.9	7.30	140	-71.1	>999	0.17
TW-3-1	Intermediate	37.6	9.91	85.1	-110	>999	0.21
TW-3-2	Intermediate	33.1	9.28	91	-211	>999	0.54
TW-4-1	Intermediate	23.0	7.80	108	-105	172	1.11
TW-4-2	Intermediate	23.3	7.18	130	-164	>999	1.71
TW-6-1	Intermediate	29.1	8.63	64	-200	>999	0.31
TW-7-1	Intermediate	28.7	7.76	1.02	-85	328	2.04
TW-8-1	Intermediate	26.0	8.99	92	-487	>999	0.00
TW-10-1	Intermediate	30.0	9.41	108	-225	>999	1.11
MW-10	Intermediate	24.4	7.49	129	-170	8	0.00
MW-14R	Intermediate	26.4	7.71	0.118	-111	11.2	0.00
P-03R	Intermediate	25.1	11.63	167	-32	48	8.01
P-01	Intermediate	26.5	7.84	90.2	37	27.8	0.00
P-02R	Intermediate	27.0	7.20	129	-175	0	0.00
P-04	Intermediate	26.1	7.78	107	-62	15.9	0.00
P-05	Intermediate	26.7	12.27	419	-166	69.7	2.20

Notes:

°C - Degrees Celsius S. U. - Standard Units mS/m - milliSiemens per meter

mV - milliVolts

NTU - Nephelometric Turbidity Unit

mg/L - milligram per liter

TABLE 5-1 SUMMARY OF SOIL ANALYTCAL RESULTS SUPPLEMENTAL GROUNDWATER CHARACTERIZATION SOUTH CAVALCADE SUPERFUND SITE HOUSTON, TEXAS

Sample Location	Zone	Sample Date	Starting Depth (ft-bgs)	Ending Depth (ft-bgs)	TOC (mg/kg)
TW-1-1	Intermediate	9/15/2005	38.0	40.0	< 54.0
TW-2-1	Intermediate	9/16/2005	42.0	44.0	< 51.9
TW-3-1	Intermediate	9/14/2005	63.0	64.0	< 54.7
TW-3-2	Intermediate	9/14/2005	57.0	58.0	< 54.2
TW-4-1	Intermediate	9/16/2005	51.0	53.0	< 57.4
TW-4-2	Intermediate	9/16/2005	52.0	53.0	< 55.5
TW-6-1	Intermediate	9/17/2005	. 55.0	56.0	< 56.9
TW-7-1	Intermediate	9/16/2005	42.0	43.0	< 57.1
TW-8-1	Intermediate	9/14/2005	41.0	43.0	< 53.9

Notes:

ft-bgs - Feet below ground surface mg/kg - milligrams per kilogram

TABLE 5-2 GROUNDWATER ANALYTCAL RESULTS SUPPLEMENTAL GROUNDWATER CHARACTERIZATION SOUTH CAVALCADE SUPERFUND SITE HOUSTON, TEXAS

Sample Location	Zone	Sample Date	Benzene (ug/l)	Naphthalene (ug/l)
TW-5-1	. Shallow	9/14/2005	<0.13	<0.26
TW-6-2	Shallow	9/18/2005	<0.13	0.54 J
TW-9-1	Shallow	9/14/2005	<0.13	<0.26
TW-9-2	Shallow	9/15/2005	<0.13	<0.26
TW-10-2	Shallow	9/14/2005	<0.13	<0.26
TW-11-1	Shallow	9/15/2005	<0.13	5.60
MW-01	Shallow	9/17/2005	<13	2100
MW-05	Shallow	9/19/2005	<0.13	<0.26
MW-25	Shallow	9/19/2005	<0.13	<0.26
MW-26	Shallow	9/19/2005	<13	1700
OW-01	Shallow	9/20/2005	<0.13	2.7
OW-08	Shallow	9/18/2005	<0.13	<0.26
OW-09	Shallow	9/20/2005	<0.13	<0.26
PZN-20	Shallow	9/17/2005	<25	3900
PZN-30	Shallow	9/17/2005	<0.13	<0.26
PZN-50	Shallow	9/17/2005	<50	8600
PZS-30	Shallow	9/19/2005	<25	3400
PZS-40	Shallow	9/17/2005	<0.63	89
PZS-60	Shallow	9/18/2005	1.7	11
TW-1-1	Intermediate	9/18/2005	0.19 J	<0.26
TW-2-1	Intermediate	9/17/2005	0.34 J	<0.26
TW-3-1	Intermediate	9/17/2005	0.16 J	<0.26
TW-3-2	Intermediate	9/15/2005	<0.13	<0.26
TW-4-1	Intermediate	9/18/2005	<0.13	<0.26
TW-4-2	Intermediate	9/19/2005	<0.13	<0.26
TW-6-1	Intermediate	9/18/2005	<0.13	<0.26
TW-7-1	Intermediate	9/18/2005	<0.13	<0.26
TW-8-1	Intermediate	9/15/2005	<0.13	<0.26
TW-10-1	Intermediate	9/17/2005	.0.13 J	<0.26
MW-10	Intermediate	9/18/2005	<1.3	150
MW-14R	Intermediate	9/19/2005	170 J	11000
P-01	Intermediate	9/18/2005	<0.13	<0.26
P-02R	Intermediate	9/19/2005	<31	4200
P-03R	Intermediate	9/20/2005	<1.3	230
P-04	Intermediate	9/18/2005	<0.13	2.3
P-05	Intermediate	9/20/2005	3.1	320

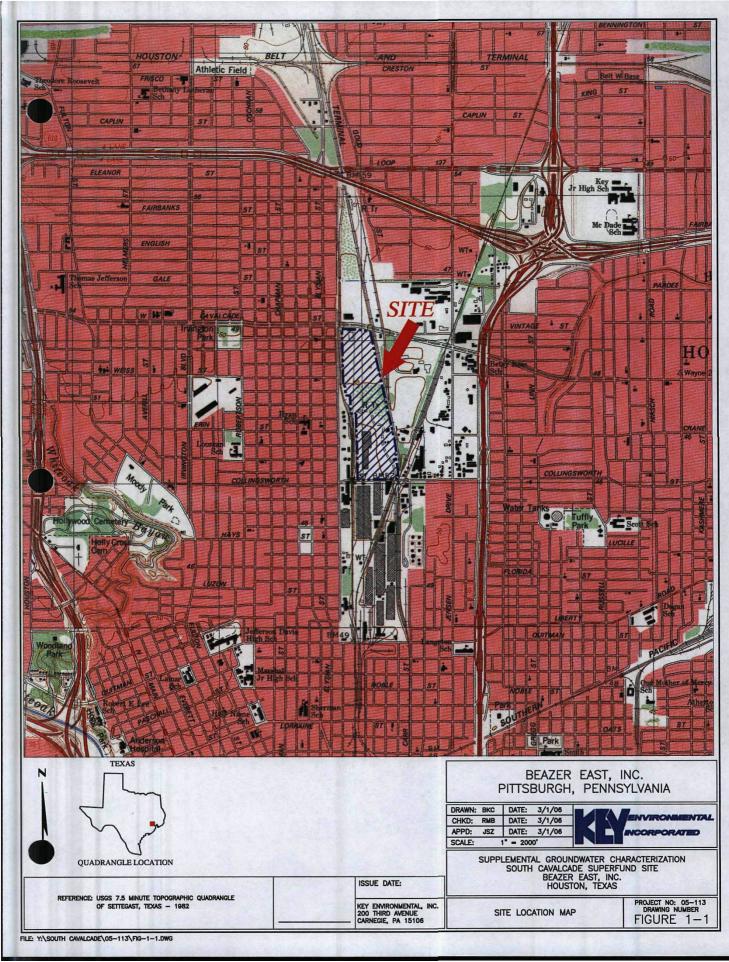
Notes:

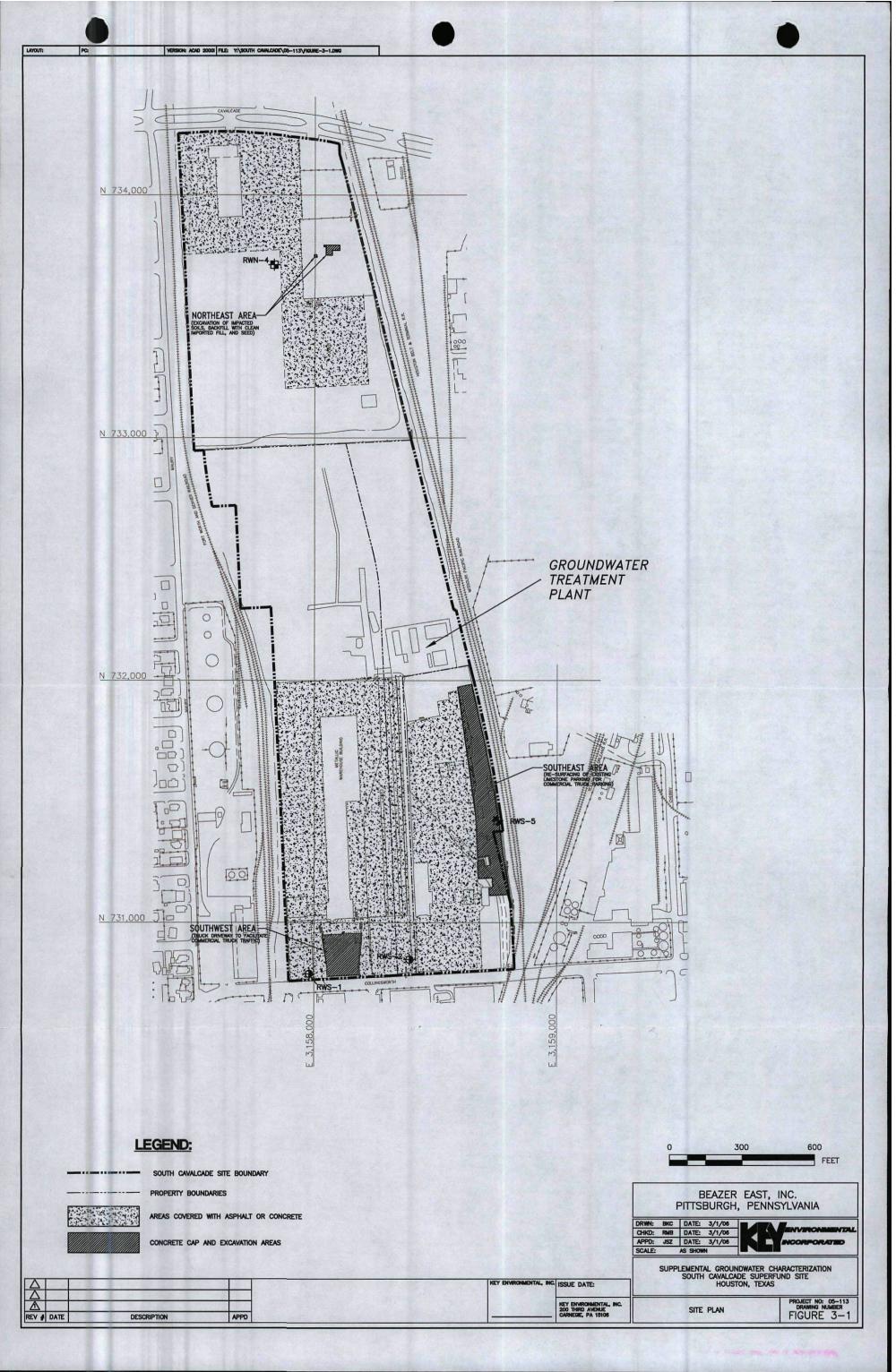
ug/L - micrograms per liter

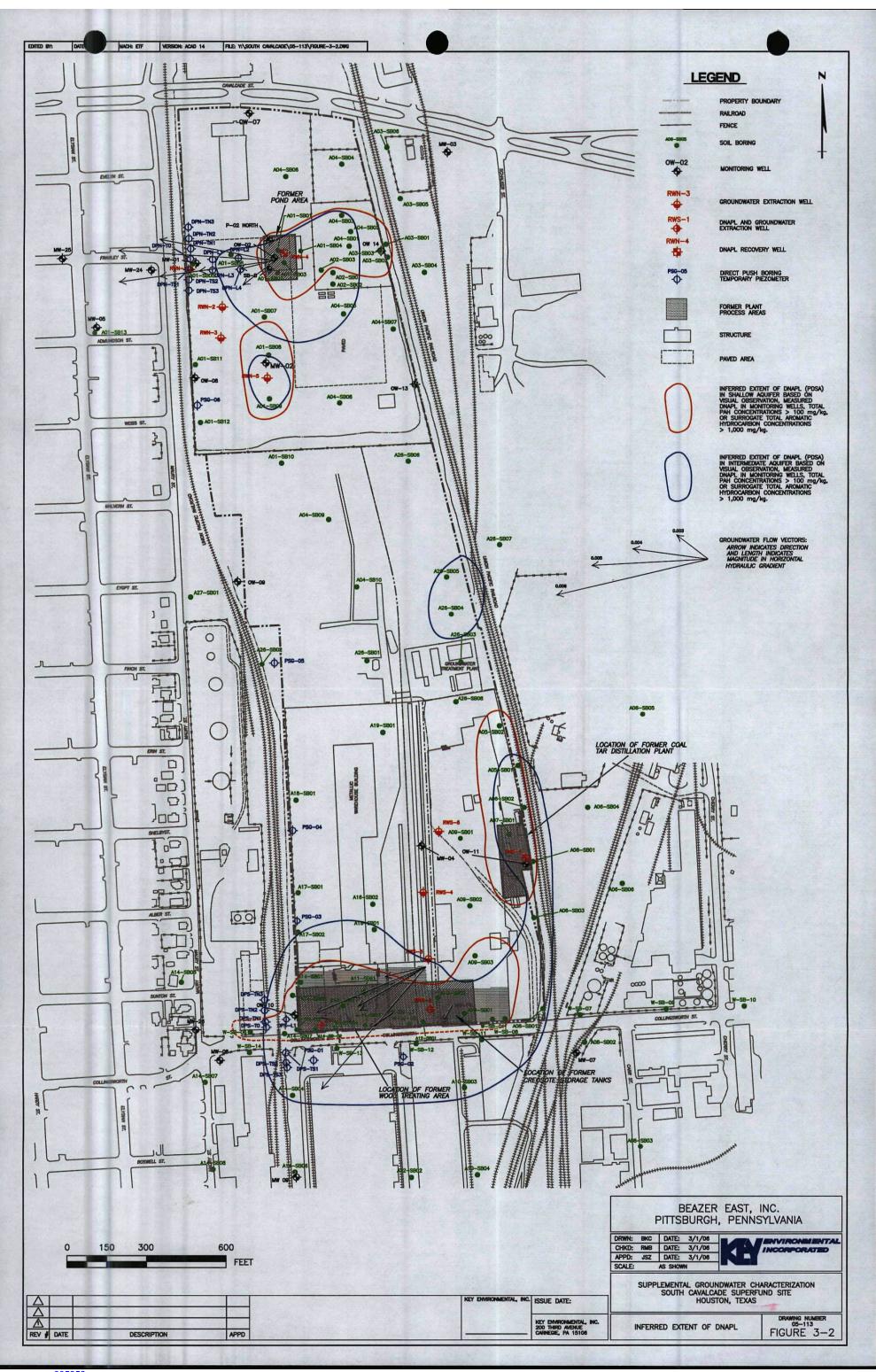
J - Estimated Value

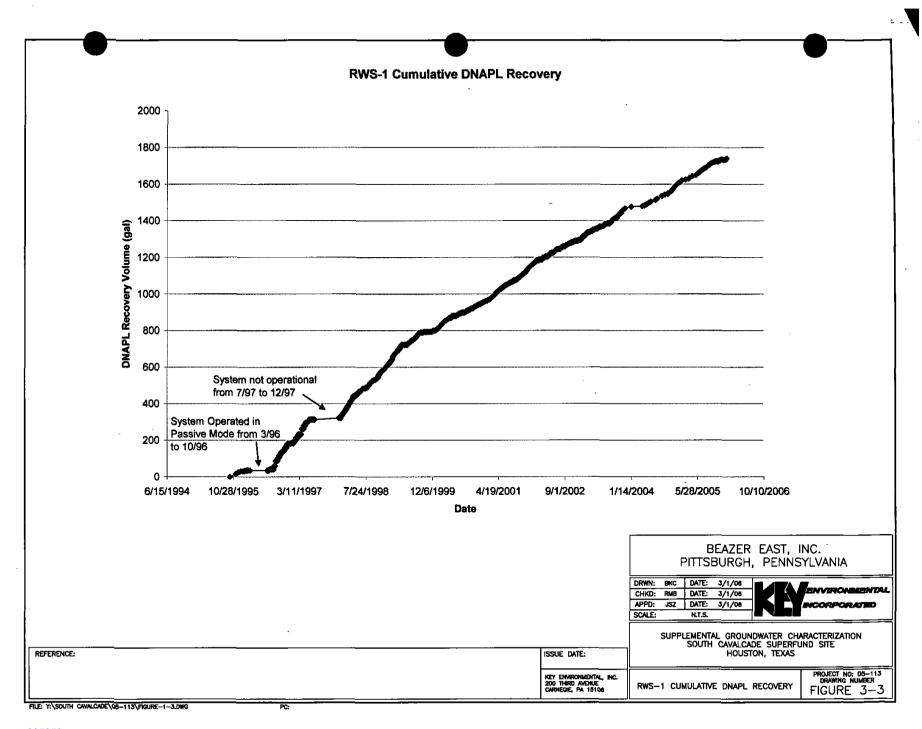
FIGURES

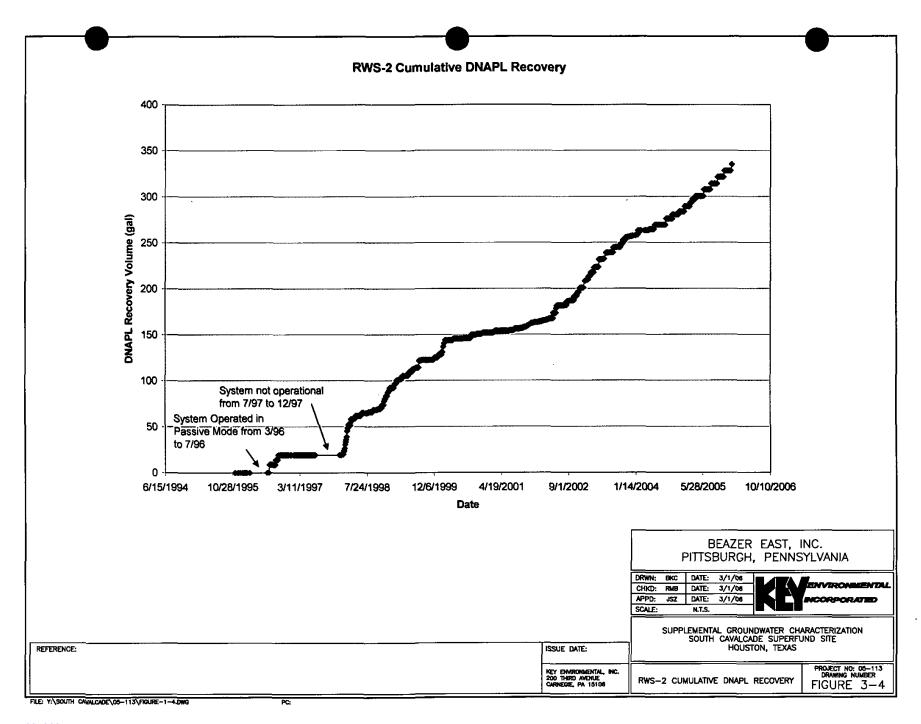


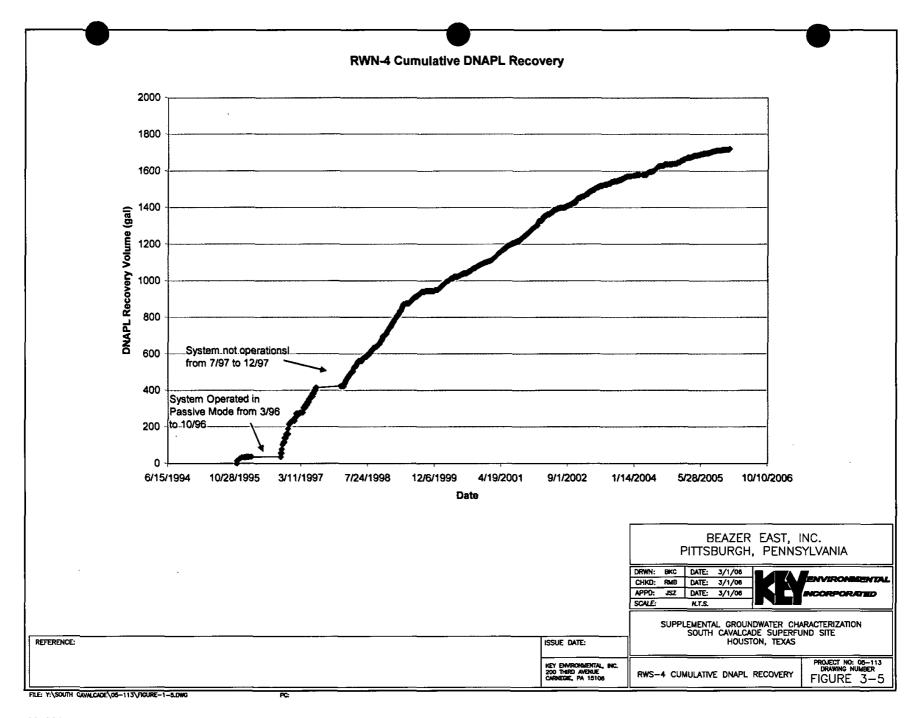


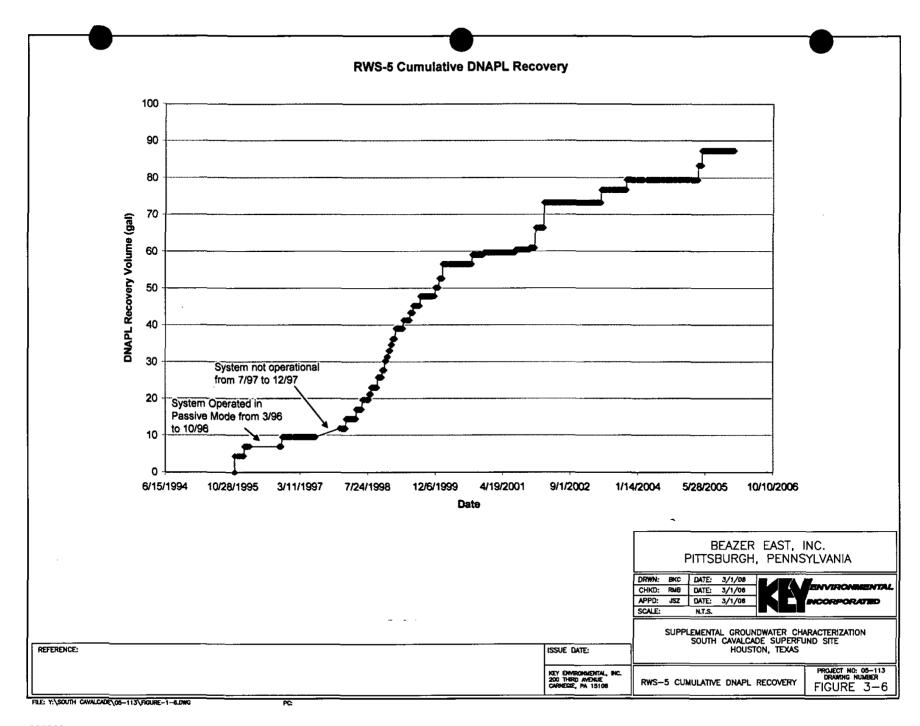


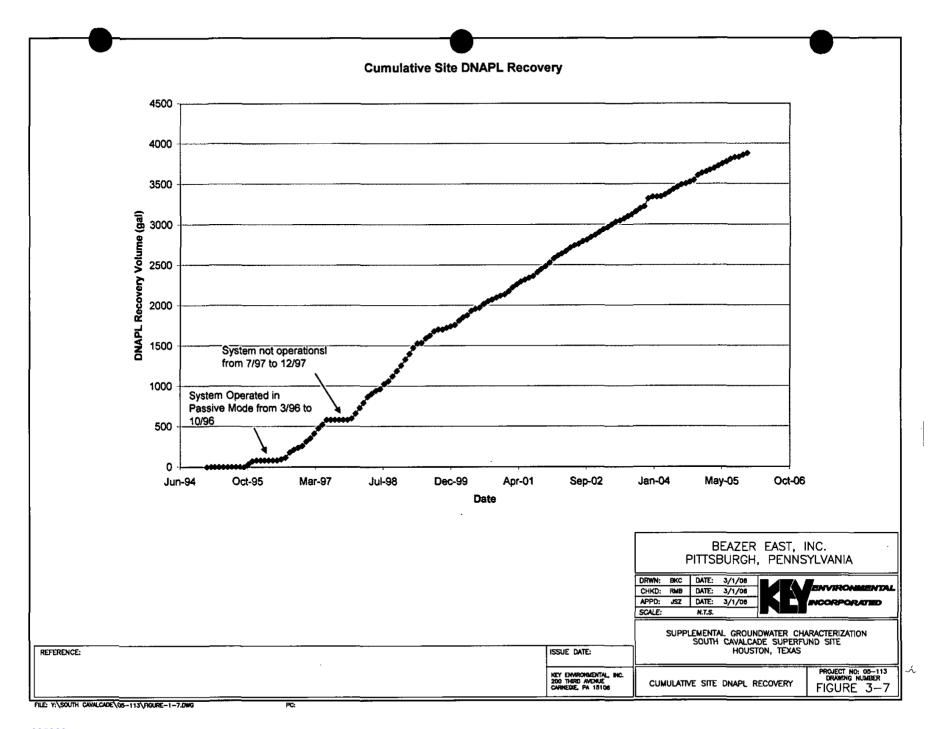


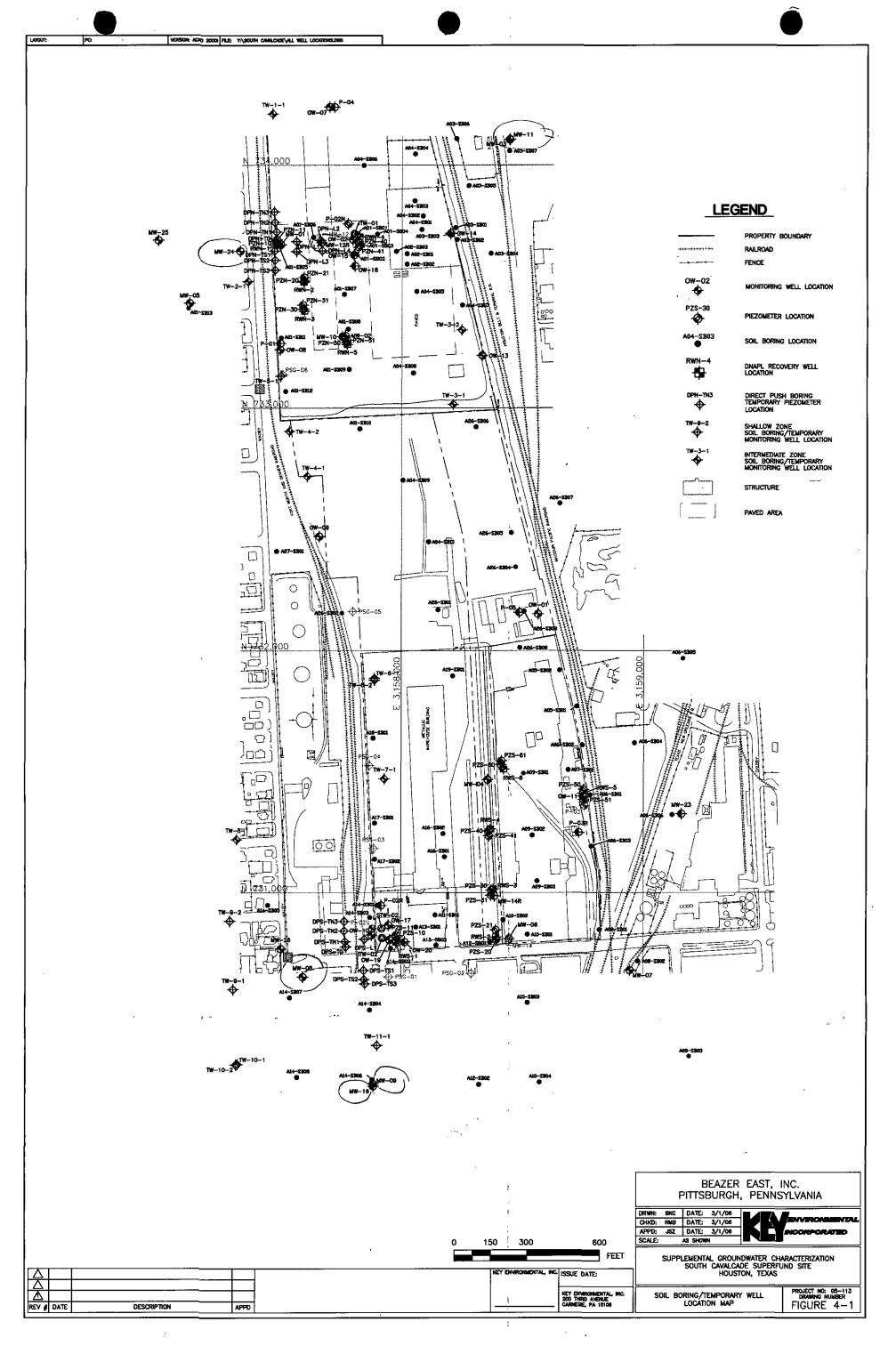


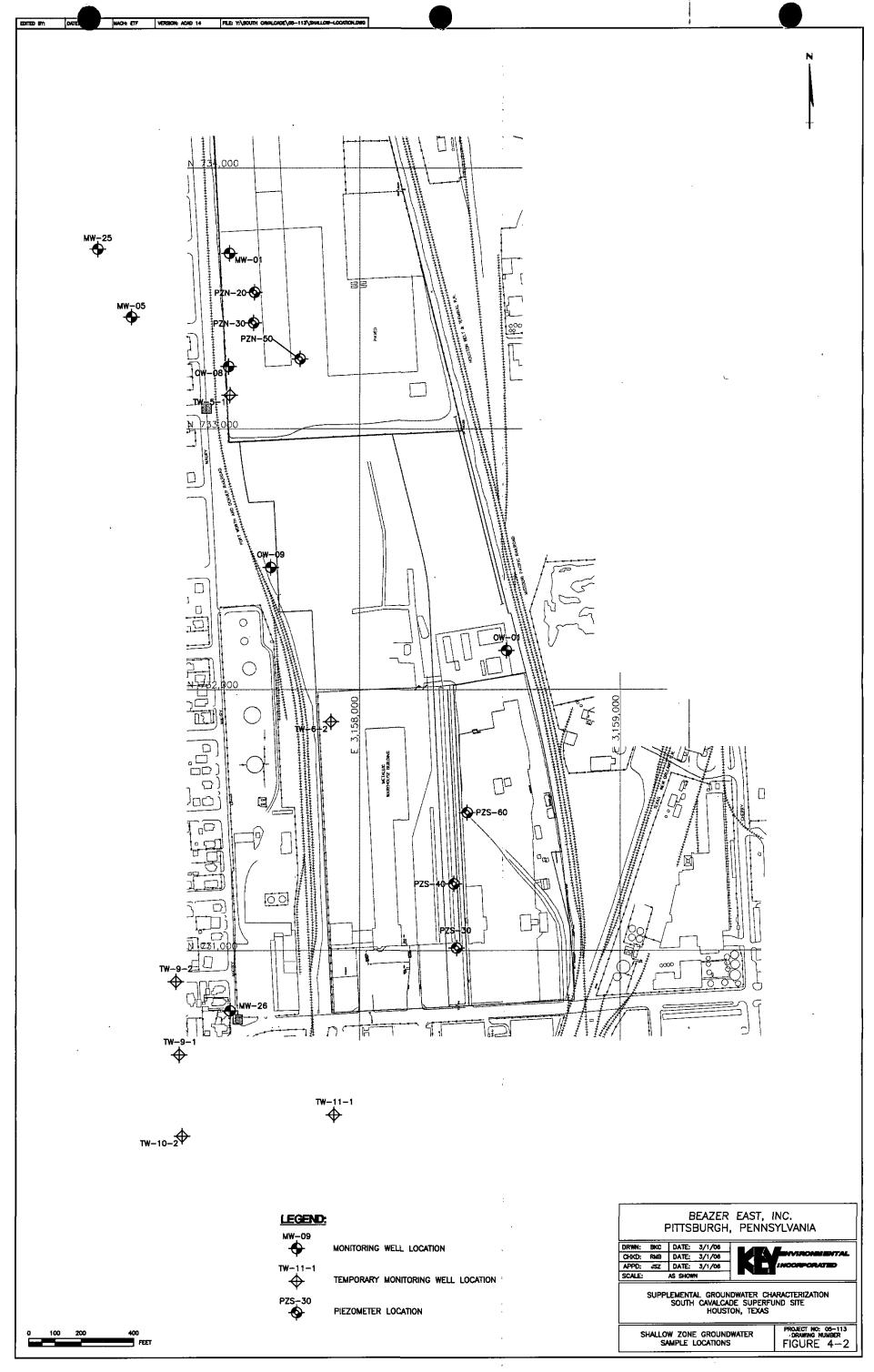


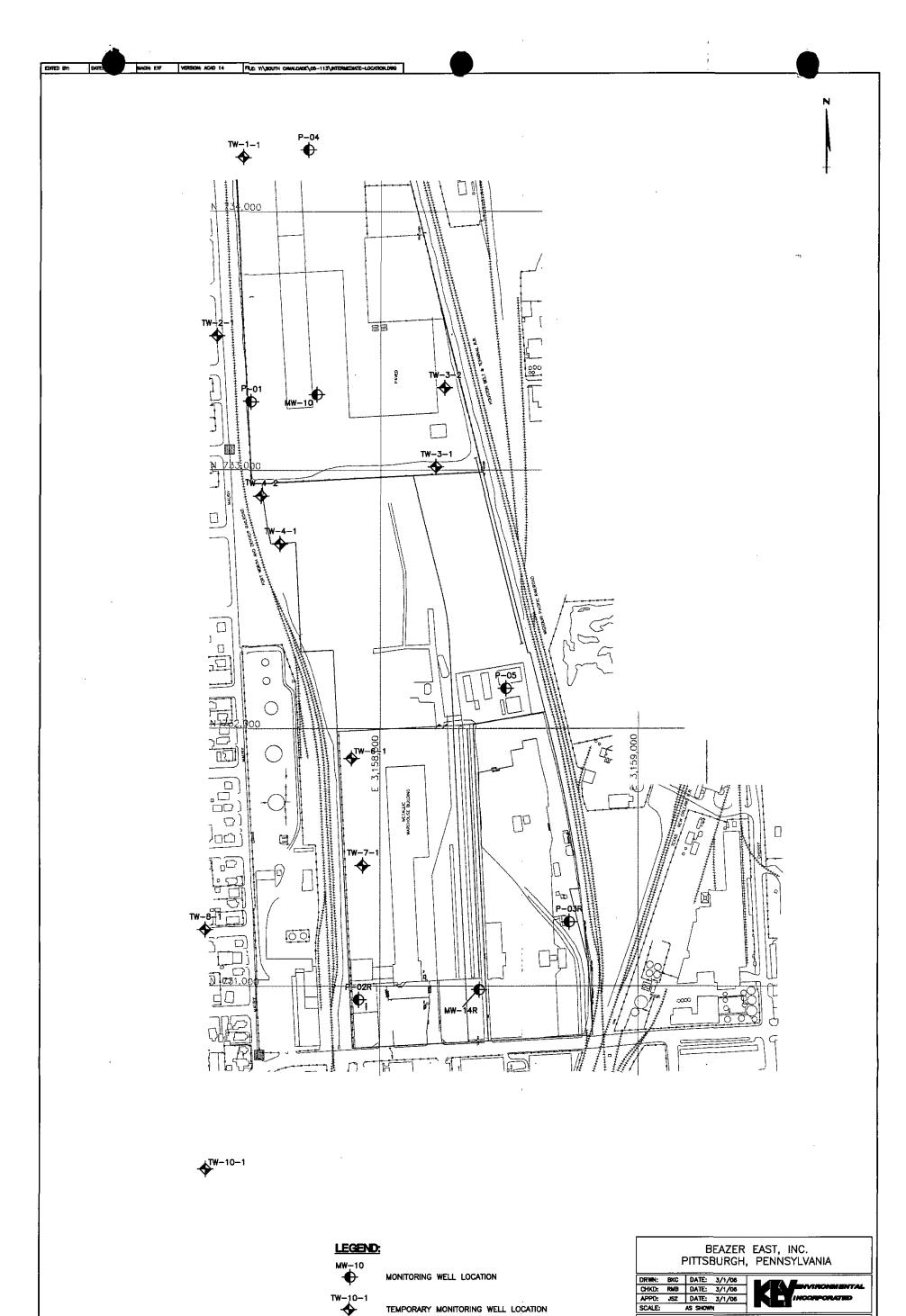












TW-10-1 ****

TEMPORARY MONITORING WELL LOCATION

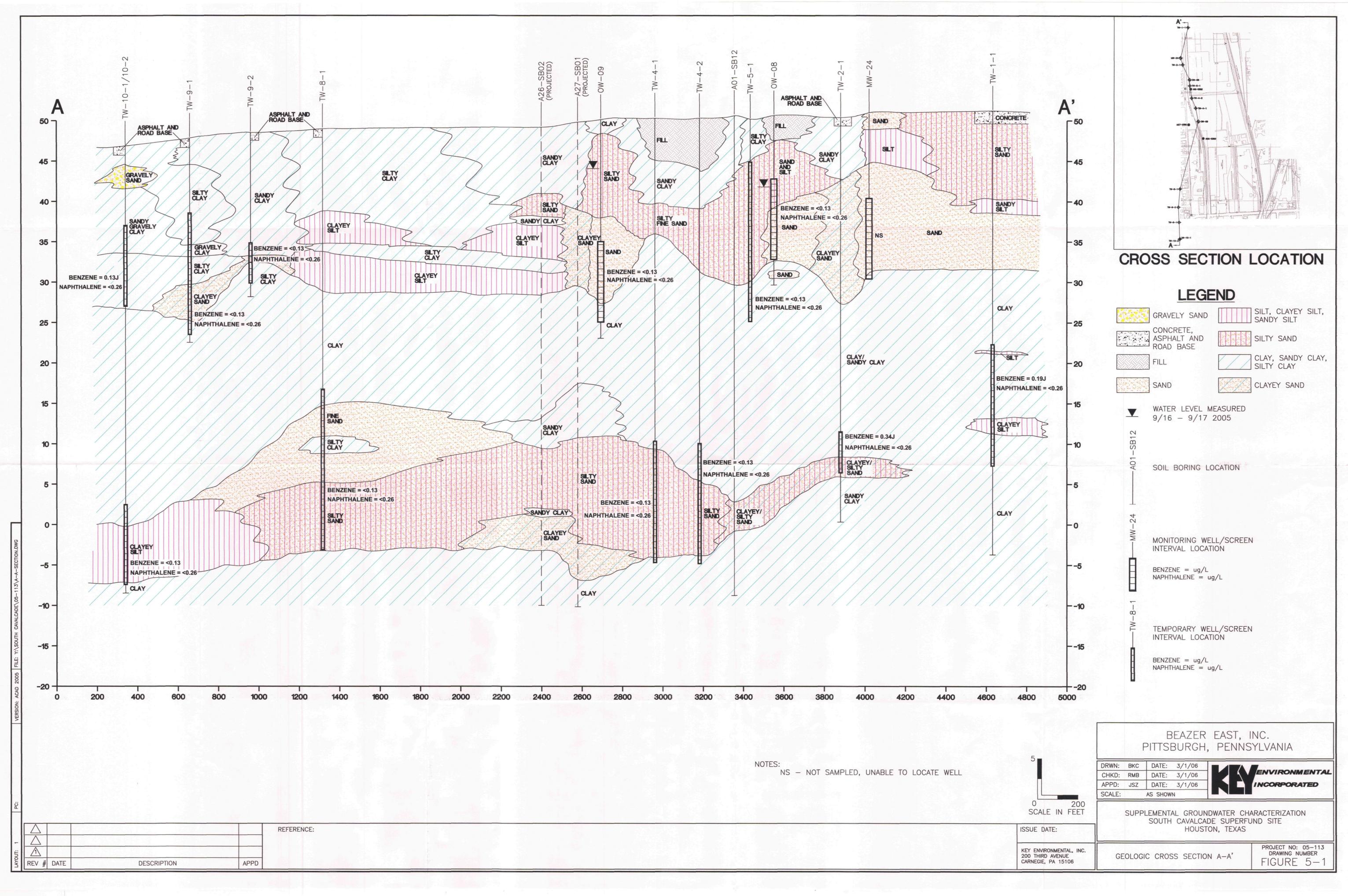
INCOMPONATED

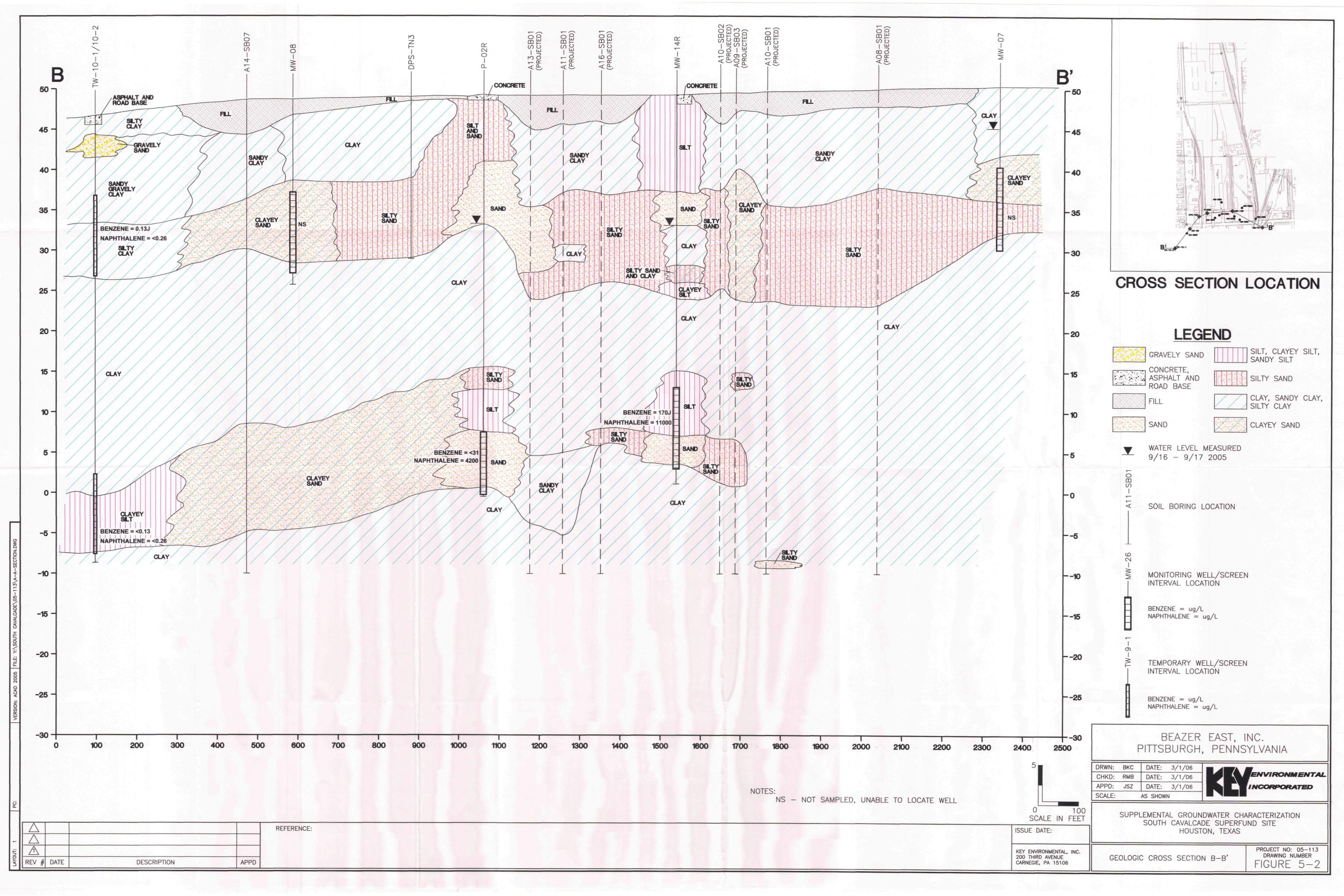
PROJECT NO: 05-113
DRAWING NUMBER
FIGURE 4-3

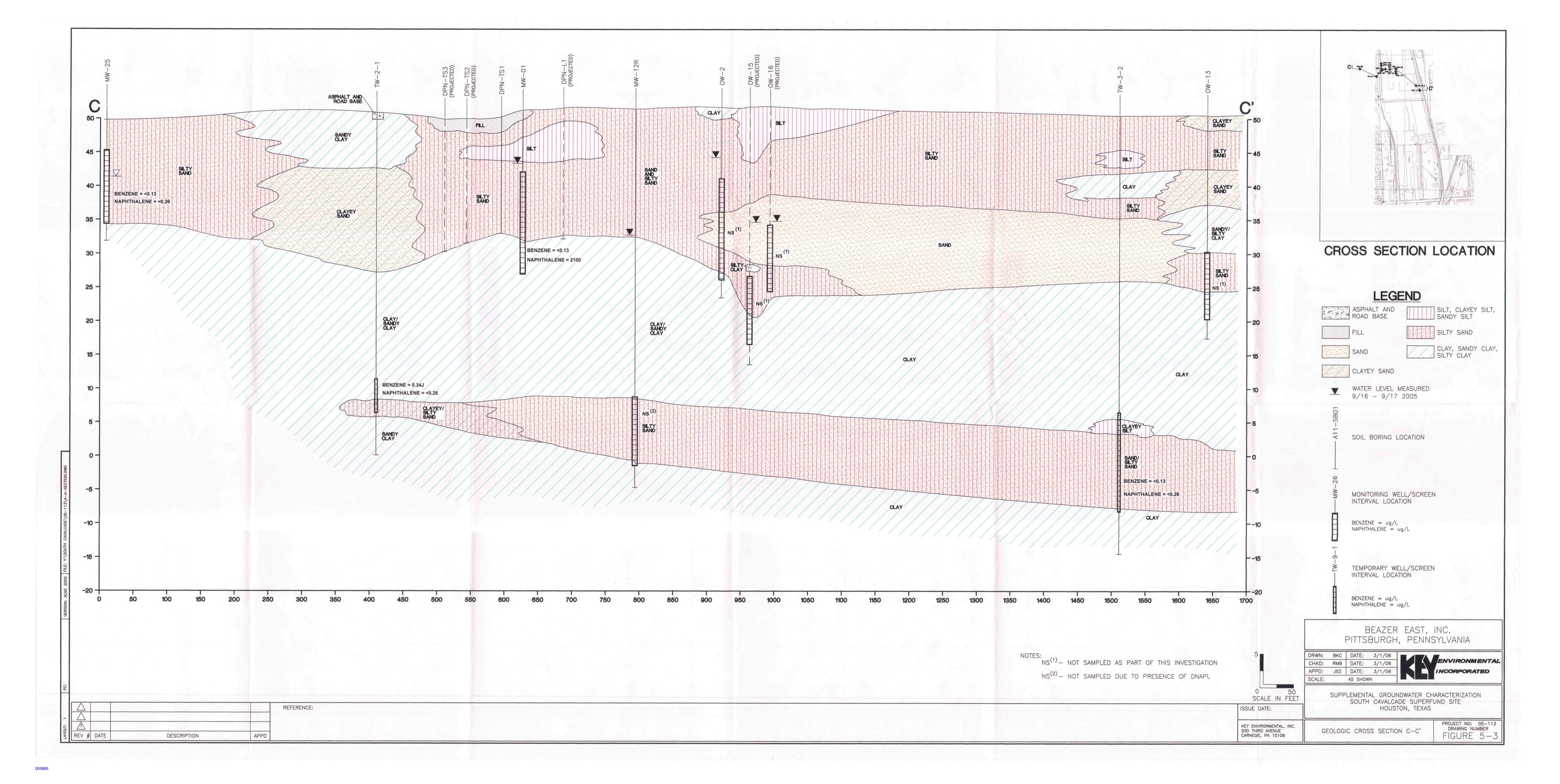
SUPPLEMENTAL GROUNDWATER CHARACTERIZATION SOUTH CAVALCADE SUPERFUND SITE HOUSTON, TEXAS

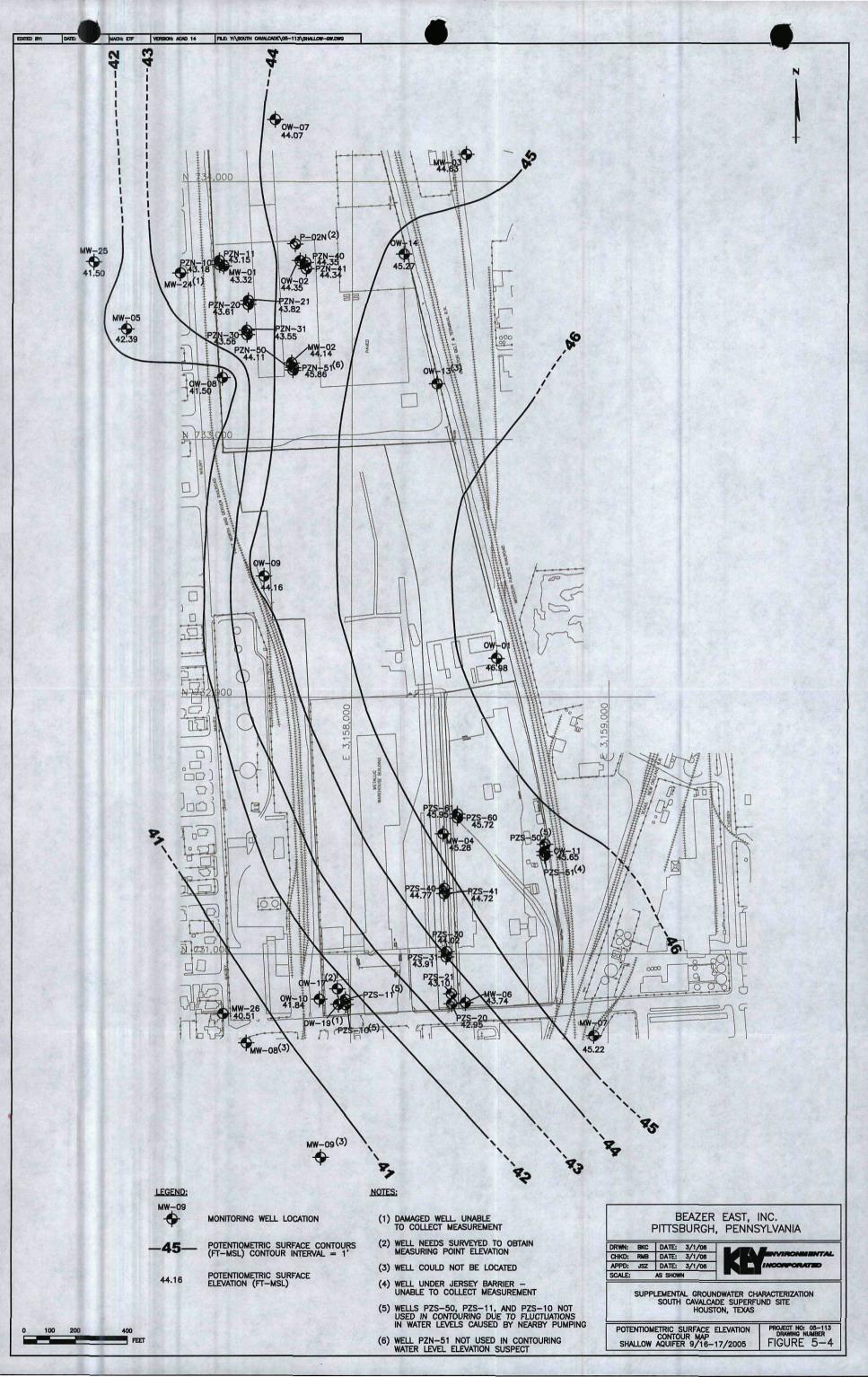
INTERMEDIATE ZONE GROUNDWATER SAMPLE LOCATIONS

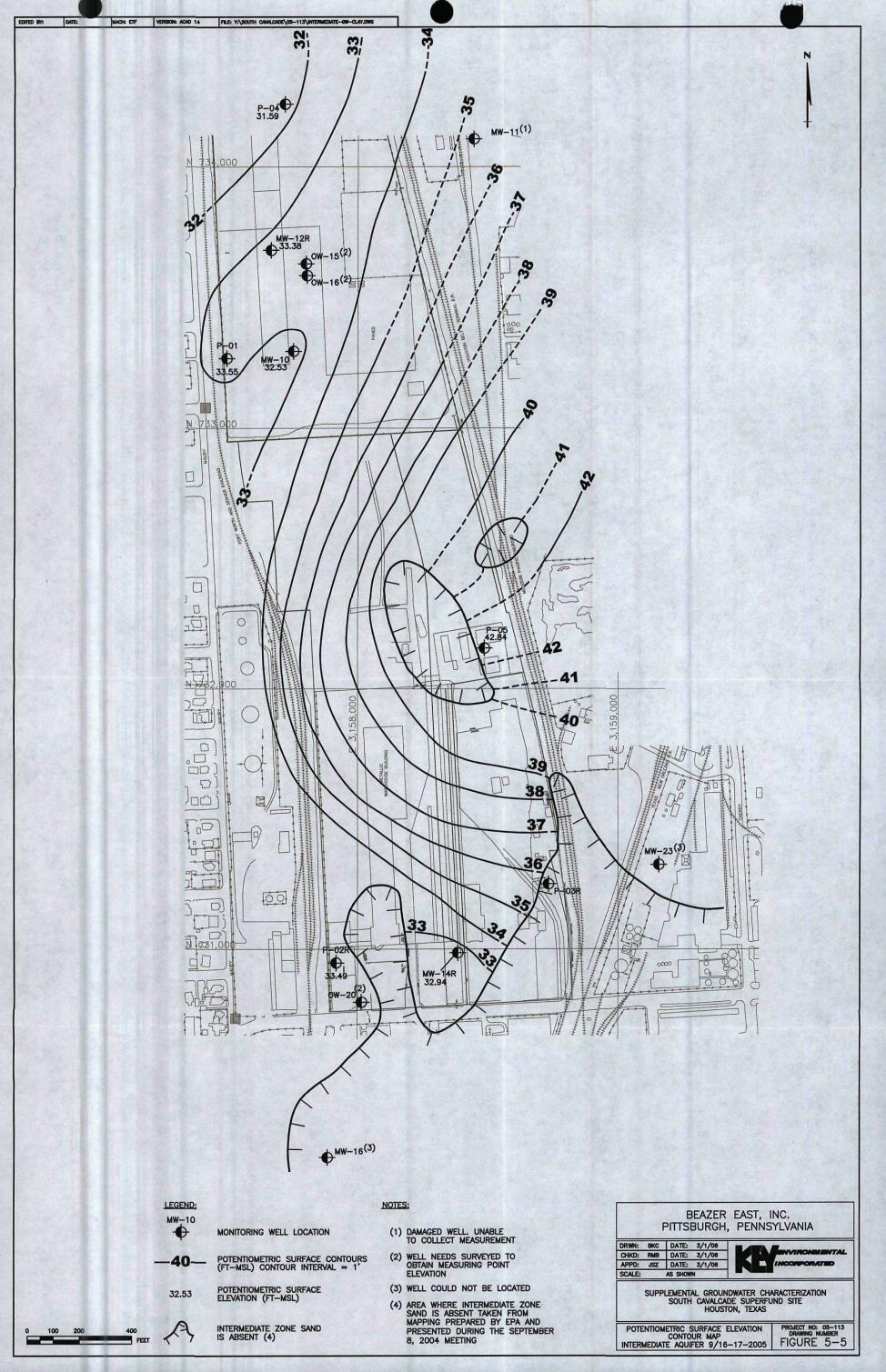
100 200 400 FEET

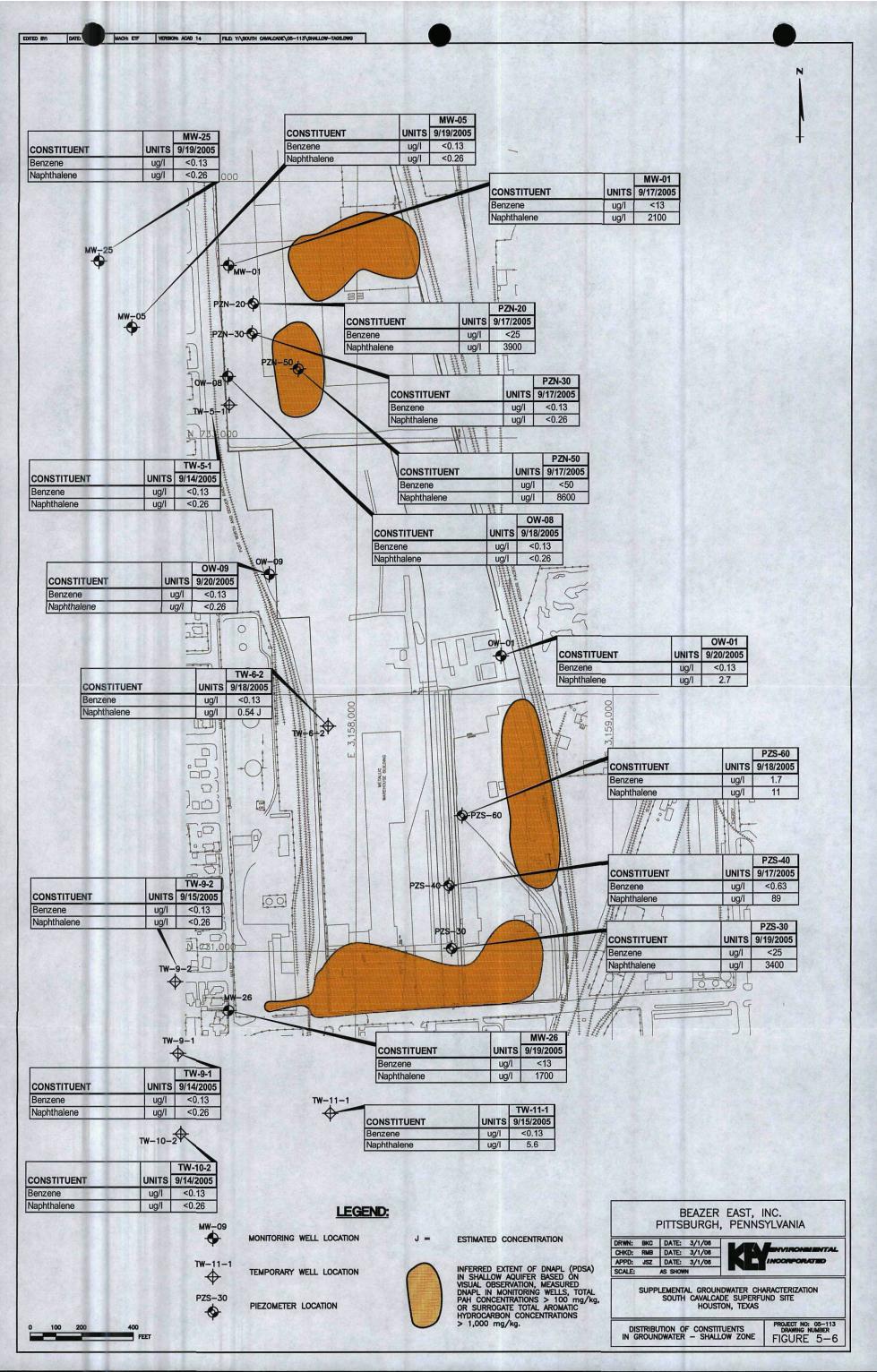


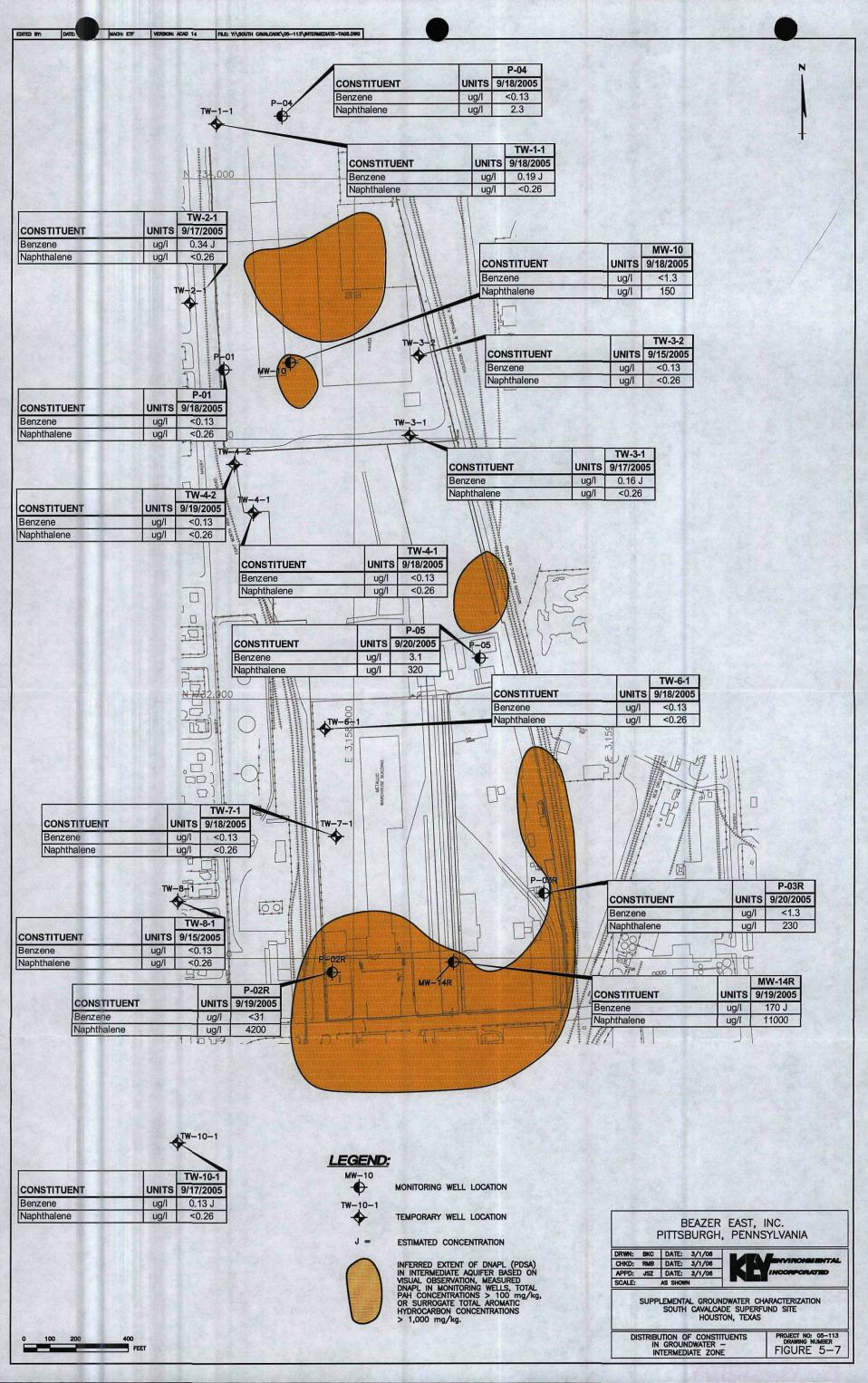












APPENDIX A BORING/TEMPORARY WELL CONSTRUCTION LOGS





LOG OF BORING:

TW-1-1

Project Localii Date/T	Fime Started:	05-1 Sou	th Cavale 9/13/2	oade: Houston, TX 205	Drilling/Boring Method: Sampling Method: Subcontractor/Drillers: Advanced Drill Monitoring Equipment: PID		Total Borring Depth (ft): 55 Ground Surface Elov. (ft-mst) 52.21 Massuring Point Elov. (ft-mst) NA Geologist/Engineer: Bob Balkovec Consultant: KEY Environmental, Inc.						
ft -bgs	Sample No.	(wad) QId		Overy		sisture, etc.)	Lithology	USCS Classification	Well Construction	C febgs			
1_		0.0		- 1.5 - 5 : Dry a	Tray Sity F-SAND nd M. Dense NAPL odor or staining observed			SM	3" PVC outer casing grouted in place: 0-25.0 1" PVC: riser 0-29' screen 29-44'	- - - 1 - -			
2_ - - 3_		0.0								_2 - - - -			
4		0.0			·					- - -4 - -			
5	2	0.0	2	Dry a	ay Sitty F-SAND nd M. Dense IAPL ador or staining observed			SM		_5 _ _ _ _6 _			
7_		0.0								- _7 -			
8_ - - 9_ -		0.0								.8 - - - - 9			
10	3	0.0	d	Trace	ay Silty F-SAND clay, Dry and M. Dense APL odor or staining observed	·		SM		- _10 - -			
11_ - - 12_		0.0		Sandy Moist No DN	.5' Yellow Orange/LI. Gray/Trace Black Fleck SILT and Trace clay and M. Dense to M. Sliff APL odor or staining observed	s (motiled)				_11			
13_ - -	*	0.0		Weta	' Gray F-SAND I-silt vd Loose APL odor or staining observed					13			
14_[5111	0.0	Gravel	<u> </u>	NOTES in - indicates inches	Signature of Fi	eld Supor	visor	Date	14			
	Clay Sand		Bedroc	· 🕸	i - mahanka a depah sa leel In-bas - kada sees leel bedaw ground surface K-ma-k-a mahanka sees koo abou meran sa kada Isha - wada kada sees kada sees kada sees ga sa kada sees ga kada sees ga sa kada sees ga sa kada sa kada sees ga sa kada sa kad	Modern ?	helh	<u> بەرىمى</u>					

Page 2 of 4

										
<u></u>		PID (ppm)		Blows/6-in.	Recovery		1 1	USCS Chastification		,
ft -bgs	Sample No			wo E	800	SOIL DESCRIPTION (color, texture, moisture, etc.)		l SC (1	Well Construction	11-bgs
14_	经 有效的	0.0							Arteinijonojijaistiinija 	_14
-			H							_
15_	4	0.0	-	4	4	15' - 19.6' Lt Gray F-SAND		SP		15
-	·		-			Wet and Loose No DNAPL odor or staining observed				F
16_		0.0	L	_						_16
_	i	ł								_
17_		0.0	L		Ì					_17
-		- }	L						l.	_
18_		0.0	Γ						1	18
] =			Г	7						-
19_		0.0								_ _19
-		3.0		\dashv	<u> </u>	-19.6' - 20' Redish Brown/Lt Gray (mottled)	77777	CL	_	-"
			\vdash	-		CLAY (Moist and V. Stiff)		102]	-
20_	5	0.0	 -	4.	<u>-</u>	No DNAPL odor or staining observed 20' - 25' Reddish Brown/Lt Gray (πottled)		CL		_20
_			\vdash	-		CLAY (V. Stiff and Moist) No DNAPL odor or staining observed				<u> -</u>
21_		0.0	-	\dashv						_21
1 -			\vdash	\dashv						-
22_		0.0	-							_22
		1	_					}		-
23_		0.0						}		_23
			L						,	- !
24_		0.0	L							_24
-										_
25_	_	0.0				Augered to 24' and pushed 3" PVC casing to 25' and grouted			3" PVC Casing set at 25'	
-	6		Γ	4.	7	-25'- 29.8' Reddish Brown/Lt Gray (mottled) CLAY V. Stiff and dry		CL		_
26_		0.0				No DNAPL odor or staining observed				_ _26
] -]				7						-
27_		0.0		1				· [1	- - _27
		0.0								-~' -
		-	\vdash	7				l		-
28 -		0.0	-	-						_28 _
			-	-					į	-
29_		0,0	H	4						_29
-			_	-	1			1	[-
30		0.0	L	\perp		5) 29.8' Lt Gray SILT M. Dense and Moist NOTES		ML		30
	SIII		l	Gravel		m - indicates inches	71 ==			
	Ctay	ZZ	В	edrock	‱	(t- instantos Depih in feet (t-bgs - indicates feet below ground contacu	₩ E	NVIRC	ONMENTAL ORATED	
	Sand	<u> </u>]				國旗 /~	CORPO	DRATED	
						ppm - Indicates parts per militar				ĺ

Page 3 of 4

	İ	PIO (ppm)	Blows/6-in.	À		1	gy also		
ft bus			9/40	Recovery	SOIL DESCRIPTION		Lithology USCS Claxstifeatlo	1 14 11 0 -1	ft-bgs
20	Sample No.		(iii	준 (2)	SOIL DESCRIPTION (color, texture, moisture, etc.)	i District	⊃ 5 a	Well Construction	30
]	7		4.			1111			
-			-	ĺ	30' - 35' Reddish Brown/Lt Gray (mottled) CLAY (Dry and Hard)		CL		_
31_		0.0			No DNAPL odor or staining observed		a		_ _31
					•		2		
-							2		_
32_		0.0					a		_32
_							a		_
-							a		-
33_		0.0					a		_33
-							2		_
-			H	1			8	1	-
34_		0.0		-			3		_34
-				1			a		
_]			\vdash				a		_
35_		0.0	 -		-35' 38' Baddish Brown & Crow (mothed)		3]	35
-	8	}	4.4	[*]	~35' - 38' Reddish Brown/Lt Gray (motlled) CLAY (Dry and Hard)		CL		-
]		1			No DNAPL odor or staining observed		a] [-
36_		0.0	Щ.				a	[-	_36
				}			9	1	_
37		0.0					a	[-	- 27
3/-		0.0	\vdash	ſ			3	 -	_37
_					.		3		-
3B_		0.0			~38' - 40' Lt Gray Clayey SILT		ML	Sampled 38-40 for TÖC	38
		""			M. Stiff and Moist		"""	on 9/15/05 @ 1640	
-					No DNAPL odor or staining observed		1	Possible Water Producing Zon _	-
39_		0.0					1	<u> </u>	39
-					•			-	-
-			\vdash				1	<u> </u>	-
40_		0.0]]]]]]]			40
-	9		4.5		Reddish Brown/ Lt Gray/ Yellow Orange (mottled) CLAY w/ trace coarse sand		Cr	-	-
_					V. Stiff and slightly moist at depth		3		
41_		0.0	\vdash		No DNAPL odor or staining observed		a 1	-	_41
_			/	1			3	}-	
							a 1	-	
12_		0.0					4	-	42
-							a 1	-	
:3-		0.0		1			a l	ļ-	43
		""					a I	-	~
-1							a 1	-	. ;
14_		0.0					a 1	-	44
_							a	-	
-								-	1
15		0.0]	- 	45
-	10		4.9	1	Reddish Brown/LI Gray (motlled) CLAY Slift and Dry		Cr		
_					No DNAPL odor or staining observed		4 1	<u> -</u>	[
46		0.0		ل			1		46
	Silt		Gravel	0000	NOTES II - Indicates incres				
					ft - and cates a cepth on feet	7& A	ENVIR	ONMENTAL	1
	Clay		Bedrock	100000	(+bg: - endicates feet below pround surface (+ncs) - sudcasus feet above mean sea level	7		PORATED	Ì
	Sand				N/A - miscribes mat applicable to this bering		LIGORE		- [
		_			ppm - ruleates parts per million				

Page 4 of 4

<u>"</u> [(mad) qua	Blows/6-in.	Recovery		logy	USCS] .
36q-); [6]	Sample No	oa.	Blow	Reco	SOIL DESCRIPTION (color, texture, moisture, etc.)	Lithology	USCS Classic	Well Construction	46
-					Reddish Brown/Lt Gray (mottled) CLAY		CL		=
7_		0.0			Stiff and Dry No DNAPL odor or staining observed				_ _47
-			H					}	-
8_		0.0	H						48
-		ĺ	\vdash						E
-		0.0	H						_49
- -		0.0	H					-	- - -
+	11	0.0		4.9	Reddish Brown/Lt Gray (motlied) CLAY Stiff and Dry		CL		⁵⁰
-		0.0			No DNAPL odor or staining observed				_ _51
-									_ `
-		0.0		1				}	_ _52
-									- -
		0.0	Щ						_53
			\vdash						-
		0.0	\vdash						_54 _
		0.0	H		Reddish BrownLt Gray (motlled) CLAY Stiff and Dry No DNAPL odor or staining observed				- - 55
⇡		10.0		_	Backfilled to 44' with Bentonile Set well to 44'	<i>VIIII</i>			_55
					Screend 29' - 44' Sand to 27'				_ _56
					Bentonite to 20'],	-
						ļ			_57
			Н						-
						· [Í	_58 _
								-	- -
			\square					-	_59 -
						1	}	. -	- - 60
						1	ľ	\- 	-
							ļ	-	61
								-	-
L.,					NOTES				62
	SJII				to - were not metre:	87A <i>1</i> 87-	-A() // 5	200 <i>000</i> 50/Te!	
	Clay		Bedroo	k 🔆	II-bgs - nideales feet below ground eurlisco II-msi - undeales feet above mean aca lovel		ICORI	ONMENTAL PORATED	
	Sand				N/A - indicates not applicable to this norming ppm - indicates parts per million				



LOG OF BORING: TW-2-1

Locatio Date/Ti	Number:	05-1 Sou	th Cav 9/15			Sampling Method Subcontractor/Drl Monitoring Equipm	lhod: Direct push : Confinuous split-s illers: Advanced Drill nent: PID 3521.75 / E31573669	ling Systems	Ground (Measurir	Surface E ng Point E it/Enginee	h (ft): 50. lev. (ft-ms lev. (ft-ms er: P. Sol EY Enviror	l) 50.61 l;NA	
l of ft-bgs	Sample No.	(யம்ப்) புக	Blows/6-In.	G. Recovery	SC Asphalt and road n	。在中国中国的国际	ION (color, texture, mo	oisture, etc.)	Lithology	USCS	TEMPOR	Construction	I - O
1											grouted a	uler casing n place: 0-25.0 riser 0-38.8' screen 38.8-43.8'	- - - - - - - -
3_							fine grained sand, app DNAPL stains or odors			GL		!	- -3 - - - -
5 6 -	2	0.0		5.0									5
7_ 7_ 8		0.0			Buff to light gray Cl	AYEY SAND. Well	sorted, fine-grained s	and, approximately		SC			- -7 - - - -8
· 9		0.0			60 to 80%. Šoft an	d wet. No observed	DNAPL stains or odo	rs.				i	- - - - - - -
11_	3			5.0									- - - 11 - - -
13_		0.0											 - - -13 - -
	Clay {			vel [en - mid o (1 - midronis (1-bgs - indicatos les (1-ms) - mototos (es	OTES alles inches is depth in feet is below ground surface e) above mean so, level applicable to this boring	Signature of F	Sield Super	risar		Date	

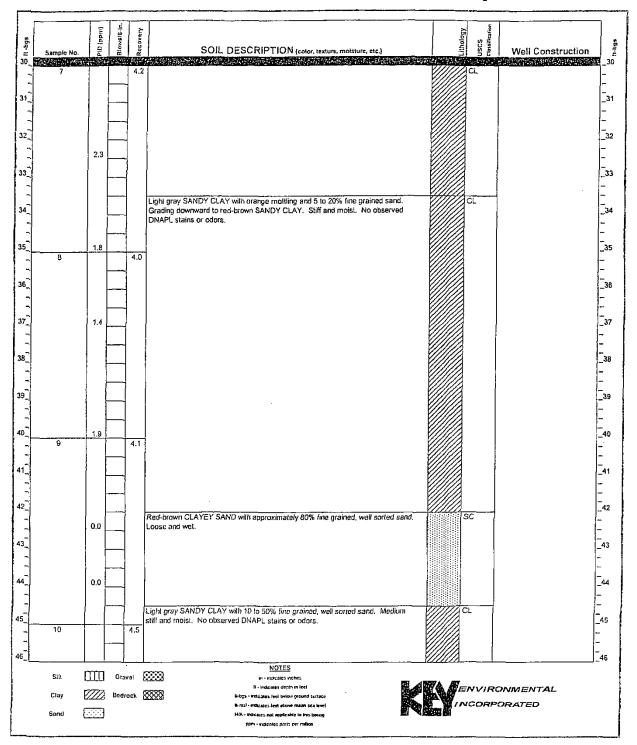
Page 2 of 4

						 	rage	2 of 4	
s6q-11-44_	Sample No.	(mdd) (Jid	Blows/6-in.	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)		USCS Classification	Well Construction	*5q. _H
15_	4	0.0		4.5					- _15 - - - -16
17_		0.0							17 18
20	5	0.0		4.5					19
22		0.0			Red-brown CLAY with light gray mottling and less than 5% sand and fine gravel. Stiff to very stiff, and moist. No observed DNAPL stains or odors.		CL		
24_	6	0.0		4.0				Boltom of Outer Casing	24
7.7_		0.0							26 27
9		2.2							_20 _ _ 29 _ _
: <u>-</u> -	SIII Clay Sand			l	to be desired a second to the	E	NVIRO	ONMENTAL ORATED	_50

LOG OF BORING:

TW-2-1 (con't)

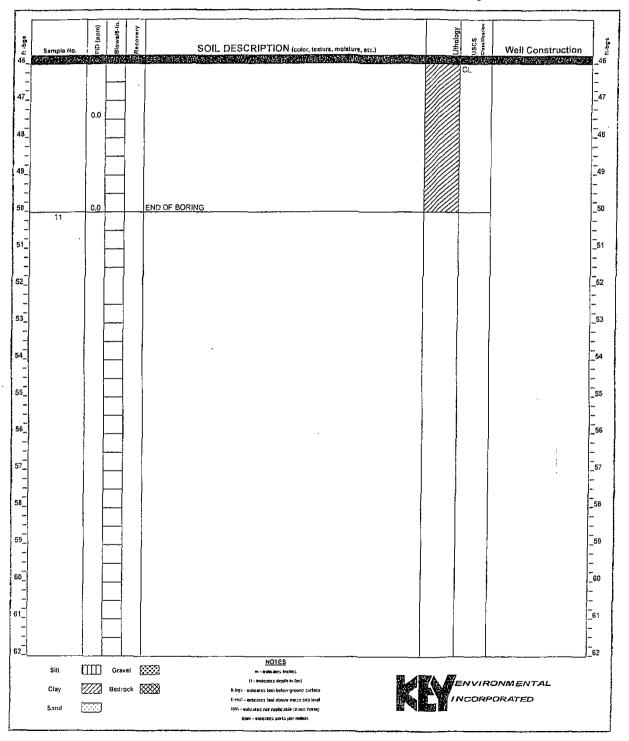
Page 3 of 4



LOG OF BORING:

TW-2-1 (con't)

Page 4 of 4





LOG OF BORING: TW-3-1

Project Locatio Date/T	Name: it Number: on: fime Started: fime Complete	05-112 South	Cavalc:	T ade: Houston, TX 12/2005 14/2005	Drilling/Boring Method: Sampling Method: Subcontractor/Drillers: Advanced D Monitoring Equipment: PID Coordinates: N733013.9 / E3158212.		Ground Measur	ring Point E ist/Engines	n (fl): 65 clev. (ft-msl) 50.04 clev. (fl-msl) NA er: Bob Balkovsc cy Environmental, Inc.	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Sample No.	0.0 0.0	Blaws/6-in.	8 Top .5' Top No DNA 5' - 5' Lt G Moist ar	OIL DESCRIPTION (color, texture, soil APL odor or staining observed Gray Clayey SILT and M. Stiff APL odor or staining observed		Uthology	S Charelleadon	Well Construction TEMPORARY WELL: 3" PVC outer casing grouted in place: 0-25.0 1" PVC: riser 0-49' screen 49-64'	
3_ 4_ - 5_ - 6_ -	2	0.0	4.1	Moist ar	ray/Yellow Orange (moffled) Clayey SfLT vd M. Stiff .PL odor or staining observed	, trace f-sand		ML		-3
8_ 9_ 10_ 	▼ 3	0.0	3.2	-10' - 14.6' t Wet and	Lt Gray Sitty F-SAND			SM	·	- _8 - - - - - - - - - - - - - - - - - -
12_	Clay	0.0	Gravel	\$223 \$223	NOTES III - indicates in their III - indicates depth in text (I-bg) - indicates lend buttor (parant) audiace (I-m2) - indicates lend puttor (parant) audiace IMA - indicates may applicable to this bitting	Signature of F		ervisor J.M.	Date	12

Page 2 of 5

		Ta	<u>.e</u>	Τ.			
ft -bg#		(mdd) Gld	Blows/6-in			(1) Well Construction	
구 도 4_ 2	Sample No.		<u></u>		SOIL DESCRIPTION (color, texture, moisture, etc	c.) 를 통 Well Construction	
~_ Ba	Securior secondonia	0.0				V////	-
_				1	~14.6' - 15' Lt Gray CLAY V. Stiff and Dry No DNAPL odor or staining observed	CL	-
5_ _	4	0.0		4.5	Top 1.5' Lt Gray Sity F-SAND	SM	-
_	4	1		٦.٠٠	Wel and Loose	J Sim	-
 6_		0.0		1	No DNAPL odor or staining observed		<u> </u>
_			 				-
-			 -				-
7_		0.0			Bott 3' Lt Gray Clayey SILT, I-sand		-
7					Wet and M. Stiff		-
3_		0.0			No DNAPL odor or staining observed		<u> -</u>
-							-
_						[]31[]3]]_
-		0.0					[-
-						1	-
	· · · · · · · · · · · · · · · · · · ·	0.0				<u> </u>	-2
-[5	_		4.0	-20' - 24' Lt Gray Clayey SILT, t-sand		-
-		0.5			Wet and M. Stiff		Ε.
-		0.0			No DNAPL odor or staining observed		_2
-							-
∐ -		0.0					_
_							-
<u>-</u>		0.0					
		0.0	-				-
_							[-
-		0.0			~24" - 25" Recidish Brown/Lt Gray CLAY (mottled)		_2
					V. Stiff and Dry	<u> </u>	-
		0.0	Į		No DNAPL odor or staining observed Auger to 24" and push 3" PVC Casing to 25" and growted	Bottom of Outer Casing	_2
- -	6			4.2	Resume dräling on 9/13/05 25-30 Reddish Brown/Lt Gray (mottled)	CL	-
		0.0			CLAY		_
		}			V.Stiff and Dry No DNAPL odor or staining observed	IIIII ML	_2
-1		ŀ			Silt seam ~26.4' - 27'		-
_		0.0			Sm 666(): ~20,4 - 21		_2
-							-
_		0.0			·		-2
_		0.0	\dashv				[
1		1					-
-		0.0					_29
-	ļ	Į					-
_1		0.0					-30
	for f			., 1	NOTES	- William I was	^
			Gra		It is attribute as an interest and found	RAWA RENVISONMENTAL	
	Clay {		Bedr	ock	II-bgc - midcaltes leet below ground surface I-ins - midcaltes leet above mean scalevel	ENVIRONMENTAL INCORPORATED	
	Sand				H/A - makales net applicable to fins baring	例の M. T. IV CURPURA! ED	

Page 3 of 5

		T -	e.	Ţ			Ē	1	٦
		(wdd) Qlö	Blows/6-in.			Lithology	USCS		,
t-bgs	Sample No.	9	Blow		SOIL DESCRIPTION (color, texture, moisture, etc.)	출	USC	Well Construction	ft-bgs
)_	7			4.5	30° - 35' Reddish Brown/Lt Gray (motiled)		CL		_30
4				-	CLAY V. Stift and Dry				[-
1		0.0			No DNAPL odor or staining observed				_31
-		Ì	l						
-		0.0		}					
-		0.0							-32
-			⊢	ł					-
=		0.0	L						_33
_									-
-		0.0							_ _34
-		"	١	İ					 -
1									-
-}-		0.0	_	4.0	35' - 40' Reddish Brown/Lt Gray (mottled)				_35
_	v		L		CLAY		CL		-
_		0.0			V. Stiff and Dry No DNAPL odor or staining observed		İ	ĺ	36
-									-
4									-
		0.0							_37
1									_
1		0.0					ļ],	_38
1								İ	_
-	•	0.0						-	
-		0.5						ļ	
_								l	_
+	9	0.0		5.0	40' - 42.6' Lt Gray Silty CLAY grading to a Clayey SILT			[-	_40
	9			5.0	V.Stiff and Dry			-	_
-		0.0			No DNAPL odor or staining observed			Į.	_ _41
-					·		CL	-	-
_								-	-
2_		0.0	-					į	_42
-		-			42.6' - 50' Lt Gray Clayey SILT		VIL	[-	-
		0.0	Ш		M. Stiff and Slightly Moist		***	<u> </u>	_ _43
_					No DNAPL odor or staining observed			Ì	-
-		0.0					ł	-	- - 44
-		0.0						<u> </u>	_***
							İ	[-	-
; <u> </u>	40	0.0		0.0	ACT ACT CON CONTROL OF AV			[45
_	10			3.2	~45' - 49' Lt Gray Sandy CLAY M. Dense and Slightly Moist		L	-	-
-		0.0			No DNAPL odor or staining observed			-	46
	P.II-				. NOTES				
		<u> </u>			21 - Indicators Indices 1) - Indicators depth in lead	VA E e	NVIR	ONMENTAL	
	Clay		Bedi	rock	R-logs - Indicates feet below ground surface Il-mss - indicates feet delove major Les level	223 TO 2017		ORATED	
		146			NIA - indicatos tea popo pulso so antes	'''افاست			

Page 4 of 5

		E	E	Je ch				ygo rella		
Sin 1	Sample No.	PIO (ppm)	Blows/B-in	Recovery	SOIL DESCRIPTION (color, texture, molecure, etc.)		Time	Lithology USCS Cleasification	Well Construction	32446
- 14	<u>nansangan</u>	0.0			~45' - 49' Lt Gray Sandy CLAY			CL		-
]		0.0			M. Dense and Slightly Moist No DNAPL odor or staining observed					_47
-										-
		0.0		-					}	_ _4(
										-
]-		0.0						a		_4
			_		-49" - 50" Lt Gray Clayey SAND becoming more sandy with depth M. Dense and wet			sc		
}	11	0.0	- 1 3	.9	No DNAPL odor or staining observed Top 2.4" Li Gray Clayey SAND becoming more sandy with depth					_51 _
		0.0			V. Dense and wet No DNAPL odo: or staining observed					5
										-
		0.0						1		_5
										-
-	.==	0.0		. - 					1	_5
			_		Bott 1.5' Lt Gray F-SAND (little fines) M Dense and Moist			SP		-
		0.0			No DNAPL odor or staining observed					_5
		0.0								- -56
	12	0.0	13	.9	55' - 60' Lt Gray F-SAND (little fines) M Dense and Moist			SP		-1
		0.0			No DNAPL odor or staining observed					
										-
		0.0	_							_57
			_							E
		0.0								_58 ~
		0.0								- - _59
		0.0	\neg							-Js
		0.0								- - -60
	13		4	.5	~60' - 63.5' Lt Gray F-SAND (little fines) M Dense a저 Moist			SP	Callected TOC from 63'-64' on 9/13/05 @ 0930	-
		0.0			No DNAPL odor or staining observed					_61
									}	-
_	*	0.0	!_	<u> </u>	NOTES			L		62
	SIII			2233 2233	en - explorates anches (t - indicates depth in feet	# /4		ENVI	RONMENTAL	
	Clay		Bedroci	· 🕸	11-bgs - makitess (est be on ground surface II-msi - indexess feet above mean son leve!			NCOR	RONMENTAL RPORATED	
	Sand				(HA - Indicates not applicative to this boxing part - indicates parts per mitori		[22 2]			

Page 5 of 5

	PiD (ppm)	Blows/6-In.	Recovery		lank	Sifestion	Well Construction	
Sample No.	ě	â	R D	SOIL DESCRIPTION (color, texture, moisture, etc.)	, j	USC	Well Construction	_6
11. A. S. S. S. S. S. S. S. S. S. S. S. S. S.	0.0		100	~63.5 - 65' Reddish Brown/LI Gray (mollled) CLAY		CL	overse or a light section. I	-6
	"			M. Sliff and Dry				
	0.0			No DNAPL odor or staining observed				6
	0.0					1		-"
			ľ				1	-
	0.0							_6
				Set well at 64' Screened from 49' - 64']	
		\dashv		Sand to 47'	-			
				Bent to 40'				
	1 1	_						
	}	\dashv						
	1							
)		1]
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	}		-			- 1	}	
		L	ــــــــــــــــــــــــــــــــــــ	NOTES		ļ		
Silt		Gravel	888	an ameliana motor				
			· 📟	It - understate depth in feet		ENVIR	ONMENTAL PORATED	
			كككك	N-bgs - indicates feet below ground surface N-ms/ - istacetes feet noove mean sea level		V <i>CORF</i>	PORATED	
Sand				N/A - undernes not applicable to this boring				



LOG OF BORING: TW-3-2

	t Neme: ct Number:	BEA 05-1	AZER i 113	EASI		Drilling/Boring Method: Sampling Method:	Geoprobe 5' Spilt Spon	Total i Groun	Bor id S	ing Deptl Juriace E	n (ft): 65 lev. (ft-msl) 50.58	
Locat	ion: Time Started:	Sou	th Ca		de: Houston, TX 12/2005	Subcontractor/Drillers: Advanced Drill Monitoring Equipment: PtD	ling Systems	Measu	irin	g Point E	lev. (fi-msf; NA r; Bob Balkovec	
	Time Complete	ed:			4/2005	Coordinates: N733321.13 / E3158246.6	37	Солѕи			Y Environmental, Inc.	
O ft-bgs	Sample No.	(mad) Old	Blows/6-in.		经大规则的股份			Lithotegy		USCS Classification	Well Construction	lt-bgs
-	1		-	2.3	Moist and	oil and angular gravel d M. Stiff PL odor or staining observed	•			SM	TEMPORARY WELL: 3" PVC outer casing grouted in place: 0-25.0	<u>-</u>
		0.0						╌╂┼┼┼╂	+		1" PVC: riser 0-44"	1
-			-	-					Ш		screen 44-59'	-
2_		0.0		-								_2
-			\vdash						Ш			- -
3_		0.0	\vdash	+	Dry and f				ii	ML/SM		_3 _
			 	}	No DNAF	PL odor or staining observed						-
4_		0.0	-	1					ii			_4 _
							•					-
) - -	2	0.0		4.2		y Clayey SILT		trrrr	m			_a _
- 6		0.0	<u> </u>	1	Moist and No DNAF	a M. Stiff PL odor or staining observed				ML		- - <u>,</u>
"- -		1.0.0.	1		-61 7 81 1.0	Service Conduction to allow		+++++		ML		_ ° _
_ 		0.0	-	1	Wet and					WLL		- -,
'- -	,	0.0			MAPIG DIAM	PL odor or staining observed						-' -
- 8		0.0	ļ		2000000	Gray Silly F-SAND			Щ	SM		- -
-		0.0			M. Dense				ľ	J.,,		_°
9		0.0			1	flow Orange/Lt Gray Sitty CLAY				 SL		- - 9
					M. Stiff ar						ļ	-
10		0.0					į					_10
-	3			4.0								-
11_		0.0			Minor blad	Orange/Lt Gray Sitly CLAY ck mottling (looks natural)			g '	CL	ļ	_11
_					Moist and No DNAP	r Stiff PL odor or staining observed				l		-
12		0.0	ļ						4		ļ.	_12
-											[.	-
13_		0.0				GrayYellow Orange (mottled) Silly F-SAND M. Dense)		s	SM	-	_13
-			_			Lodor or staining observed					-	-
14		0.0	<u></u>	L_		NOTES	T					_14
	SIII	Ш] Gr	avel	8333	si - Industria inches	Signature of Fi	ield Sup	erv	risor	Date	
	Clay		} Bed	rock		fi-togs - macrates (set below ground surface fi-ms) - macrates feet apove mean sex level	adus	W	'n	nu	_	İ
	Sand	1000	1			N/A - profession that expels abbs to that however	7		-			- 1

					20001	011			2 of 5	
s5q- 1) 14	Sample No.	PIO (ppm)	Blows/6-In.	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)			USCS Cleanification	Well Construction	86q.4 14
-		0.0	Ī					sм		<u> </u>
15_		0.0		<u> </u>						
-	4			4.5	Lt Gray and Yellow Orange F-SAND, t-silt Wet and Loose			SP	7	-
16_		0.0			No DNAPL odor or staining observed					
-										-
17_		0.0								_17
-			L							_
18_		0.0								_18
-			<u></u>							-
19_		0.0								_19
			<u> </u>							-
20		0.0								_20
	5	1	 	4.0	~20' - 24,5' Lt Gray and Yellow Orange F-SAND, t-silt			SP		- -
21_		0.0			Wet and Loose No DNAPL odor or staining observed					_21
-		-			·					-
22_		0.0	<u> </u>							_22
										-
23		0.0								_23
-					•				:	-
24_		0.0								_24
					-24.5" - 25' Reddish Brown/Lt Gray (motlled) CLAY (V. Stiff and Dry)	Y7777	777,	CL		-
25	6	0.0		4.5	No DNAPL odor or staining observed Auger to 24' and push 3" PVC Casing to 25' and grouted				Bottom of Outer Casing	_25
-	J	0.0		٠.٦	Resume Drilling on 9/13/05 25' - 30' Reddish Brown\t Gray (mottled)			CL		-
26_		"			CLAY V.Stiff and Dry					_26
-					No DNAPL odor or staining observed Sitt seam ~27-27.3' and 27.6'-28'					<u>-</u>
27_		0.0	\vdash							_27
]								1		[
28_		0.0							}	_28
-										-
29_		0.0	\dashv							_29
-										<u> </u>
30_		0.0			MOTES					_30
	Sitt			vet {	m - andreatius inches	7 A 1	ø.	MVIPI	DAM SAITA!	
	Clay		Bedi	ock [It-bgs - nycloales feet below ground surface th-mis - nelscates feet above more son fovel	7	12	CORP	ONMENTAL ORATED	
	Sand				M/A - militaries not repo califo to this betting pitts - indicates parts set militin					

Page 3 of 5

<u></u>									
	_	Ē	Ë	1			20		
ě		(mad) Old	Blows/6-in.	24000			Lithology USCS		
30_ 11 -bgs	Sample No		읆		SOIL DESCRIPTION (color, texture, moisture, etc.)	-	를 (š.	Well Construction	h-bgs
30_	7	100		4.0	-30" - 31" Reddish Brown/LI Gray (moltied)	1///	//CL		30
_		-		_	CLAY				_
I _i		0.0	Į		V.Stiff and Dry No DNAPL odor or staining observed				_31
31_			 :	 -	-31' - 31.8' Reddish Brown SILT seam	KKK	}}} -		_31
_			ļ		Dense and Dry		ML	1	_ -
		0.0	ļ	ļ	No DNAPL ador or staining observed		 		- 32
32_		0.0	-	1				-	_32
					~31.8' - 35' Reddish Brown/Lt Gray (moltled)		CL	1 5	_
33_		0.0	ł	İ	CLAY V. Stiff andd Dry			į	_33
33_		0.0		1	No DNAPL odor or staining observed		%	<u> </u>	_33
_			<u> </u>	ļ	-		//		-
34		0.0	1	İ				ſ	_ _34
-		5.0	\vdash	1			//		_54
-		-	<u> </u>	1					_
35		0.0	1				%	-	35
"	В	1	Τ-	4.0	35' - 40' Reddish Brown/Lt Gray (mottled)				
-				}	CLAY V. Stiff and Dry		CL		-
36		0.0	()	Ì	V. Stiff and Dry No DNAPL odor or staining observed		2		36
_					······································		A	[_
-		}	\vdash				%		-
37_		0.0					<i></i>	1	_37
								[_
-							%	-	-
38_		0.0					2		_38
-1							2	[-	_
-			<u> </u>				2	-	-
39_		0.0			•		2		
_									_
-		-		ł				-	-
40		0.0		L					40
-	9			4.1	40' - 45' Lt Gray Silty CLAY		CL	-	_
-/				ĺ	Stiff and Slightly Moist No DNAPL odor or staining observed		2	[-	-
41_		0.0		' i			8	-	41
-							8	-	-
-		0.0					4	-	-
42_							8		42
-							8	-	
							8		
43_		0.0					8	-	43
-		1		}	ł		8	}-	
_							8		
44_		0.0		ا آ				· -	44
-							A]-	.
-							8		. 1
45		0.0			ACL 47 D O WATER OF THE COMPANY OF T		4		45
-	10		ĺ	4.6	~45' - 47' Lt Gray/Yellow Orange Clayey S/LT Grading into a Sity V.F-SAND @ 47'		ML.	[-	ĺ
-1				- 1	M. Dense and Moist		11		.
45		0.0			No DNAPL odor or staining observed	ШШ	11	_ 	46
	Silt	Ш	Gra	vel [NOTES In + Indicato; Inches				1
					h - endurates depth in Icet	Ze A	ENVI	RONMENTAL	ļ
	Clay		Bedr	rock {	R-bgs - indicates feet below ground surface thind - indicates feet above mean say level	P	,	RPORATED	1
	Sand				AttA - indicates test above mean sea pring				1
					pom - Indicates parts per matten				- 1
									I

LOG OF BORING: TW-3-2 (con't)

. Page 4 of 5

		Ê	/6-in.					Allon Mark		
85g, 1 46_	Sample No.	P10 (ppm)	Blavs/6-in	<u> </u>	SOIL DESCRIPTION (color, texture, moisture, etc.)	- 1		Lifthology USCS Classification	Well Construction	lt-bgs
46_		1.6%	18.70	2.0						_46
		0.0]						
47_		0.0		l	~47' - 50' Lt Gray/Yellow Orange Silty V.F-SAND			SP		_47
"-				1	M Dense and Moisl					_
1 -		İ	-	1	No DNAPL odor or staining observed	ļ				<u> -</u>
48_		0.0	-	1						_ ⁴⁸
-				ļ		l				F
49_		0.0		İ					·	_49
1 =										<u> -</u>
50_		0.0								50
"-	11			4.3	FOLER FLICTON V. F. CAND			65		-
			-		50' - 58.5' Lt Gray V. F-SAND M Dense and Moist			SP		-
51_		0.0	-	-	No DNAPL odor or staining observed					_51
-[<u></u>							F
52_		0.0	_						1	_ _52
										-
53_		0.0								_ _53
1 =			\sqcap	i					}	-
			-							_
54_		0.0	-						İ	_54
-		ĺ	_							-
55_	12	0.0		ļ.,						_55
-	12			4.4					1	_
56_		0.0								_ _56
-										- ;
57_									Collected TOC from 57'-58'	
3,-		0,0							on 9/13/05 @ 1505	-5'
_										<u> -</u>
5B_		0.0	<u> </u>					1		_58
		- -	ļ		58.5' - 60' Reddish Brown/Lt Gray (mollled)		77777	CL		F.
59_		0.0			CLAY			1		_ _59
					V. Stiff and Dry No DNAPL odor or staining observed					-
60_		0.0			-					_60
-	13	0.0		4.5						
-		1	\vdash							- -
61_		0.0								_61
]			$\sqsubseteq \mid$							_
G2		0.0								_62
	Silt	Ш	Gra	vel	NOTES in - Indicates Inches			_		
	Clay				R - Indicates death in feel (f-bgs - indicates feel before ground surface			ENVIE	RONMENTAL	
	Sand				It-msl - indexion (not above mean sna leve)	No.		NCOR	PORATED	
	aang	(1.1.1.	ı		(4/A - endicade) and applicable to that boung point - indicates parts per railbon	4 1046				

LOG OF BORING: TW-3-2 (con't)

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		Î	Ë	λ		3	1		7
Spin		<u>a</u>	Blows/6-in.	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)) olog	USCS	Well Construction	8
Spm	ple No.		ő Szerve	ري ماريخ	SOIL DESCRIPTION (color, texture, moisture, etc.)		≝ 6 600 350 8	ven Construction	2
MAKE SIN	THE PERSON NAMED IN	0.0			~83.5' - 65' Reddish Brown/Lt Gray (mottled) CLAY		CL	The state of the s	7
				- 1	M. Stiff and Dry No DNAPL odor or staining observed		i		-
ļ		0.0			No DATE COOK OF Making Cook 190				
}		1 :					1	-	-
			\square		•		Ì		
	_	0.0						1	[]
					Set well at 59' Screened from 44' - 59']	1
				1	Sand to 42'	1			Ì
					Bent to 38'	1	1	1	
				-			1	}	1
									ĺ
		1 1							1
))				J J			1
		1							1
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				1					
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					NOTES				
SII	nt		Grave	<u> </u>	in - inducates instres II - inducates doction levit				
Cla	ау		Bedrac	k 🔯	- Industries between these		=NVIR	ONMENTAL PORATED	
San					Is-mail - wocades feet associates as devel	1 11	NCORF	PORATED	
341		التشتيط			N/A - indentes not applicable to this boring ppm - miscales parts per minore				



LOG OF BORING:

TW-4-1

Locatio Date/Ti	t Number.	05-1 Sout	h Cava	lcad: 9/15	e: Houston, TX //2005 //2005	Orilling/Boring Method: Sampling Method: Subcontractor/Drillers: Advanced Orillin Moritoring Equipment: PID Coordinates: N732717.5 / E3157610.61	Geoprobe 5' Split Spon ng Systems	Ground Measuri	ng Point E st/Engines	h (ft): 55 lev. (ft-msi) 50.18 Elev. (ft-msi) NA sr: Bob Balkovec EY Environmental, Inc.	
o ft-bgs	Sample No.	PIO (ppm)	Blows/6-in.	Recovery	经销售等的的债金 長	IL DESCRIPTION (color, texture, moi	sture, etc.)	Lithology	USCS	Well Construction	R-bgs
-	1	0.0		3.2	Soli looks loose and	ay Silty F-SAND reworked moist Lodor or staining observed			SM	TEMPORARY WELL: 3" PVC outer casing grouted in place: 0-20.0	_ _ _ _1
1_ - - 2_		0.0								1" PVC: riser 0-40' screen 40-55'	- - - -2
2 3		0.0									_ _ _ _3
4_		0.0									- - ₋ 4
5		0.0				·					- - - -5
5	2	0.0		4.1	Sandy CL. M Stiff and				CL		_ _ _ 6
7_		0.0									- - - -7
8_ 8_		0.0									- - - -8
9_		0.0									- - - -9
10_	3	0.0		3.7	Top .5 Lt Gray Sandy Cl	//Yellow Orange (motiled) AY w/ silt. M Stiff and Moist			CL		_ _ _10
11_	¥	0.0			No DNAPI	Lodor or staining observed					_ _ _11
12_		0.0				Lodor or staining observed			SM		- - -12
13_		0,0									- - -13 -
14		0.0				NOTES					- _ _14
i !	Silt		Grav			m - indicates inches	Signature of F	ield Supe	rvisor	Date	
	Ctay		Bedro	ck į	2000	fi-bgs - and-sales feet below ground surface si-ms! - ands ales fact above mean sea lavel NI/A - Indicates not applicable to this borang	() show it	rell	سب	<u> </u>	

LOG OF BORING: TW-4-1 (con't)

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		E	Ţ.Ę	ì		-	5		
5		PID (ppm)	Blows/6-in.	rendu de		Lithology	USCS		5
£gd-1}	Sample No.		<u> </u>	Ď.	SOIL DESCRIPTION (color, lexture, moisture, etc.)			Well Construction	Se 44
14_	MARKA BURKE	0.0		Careca	~14 Reddish Brown/LI Gray CLAY (mollled)	111111	CL	A STATE OF THE STA	_14
] -					V. Stilf and Dry No DNAPL odor or staining observed		Ì		-
15_		0.0	İ		NO DIVAPE 0007 OF STAINING OUSBIVED				_ _15
-	4	1		4.0					_
-					V. Stiff and Dry No DNAPL odor or staining observed				-
16_		0.0			•				_16
-		1							-
]]		İ	-						_
17_		0.0	<u> </u>						_17
! -									
1		0.0	Ì					ļ	
"		0.0	\vdash						<u>_</u> "
-			\vdash						-
19_		0.0							_19
-									-
					Auger to 19' and push 3" PVC Casing to 20' and grout up				_
20	5	0.0	\square	3.7	Resume drilling on 9/16/05			Bottom of Outer Casing	_20
	J		L.	3.1	20' - 25' Reddish Brown/Lt Gray (mottled)		CL		_
21		0.0			CLAY V.Stiff and Dry				
		0.0	\vdash		No DNAPL odor or staining observed				
-		}	$\vdash \vdash$						-
22_		0.0			,				_22
-									-
-									_
23		0.0							_23
									_
24		0.0							24
_]
-		Į					ĺ		-
25_		0.0							_25
	6			4.3	25' - 30' Reddish Brown/Lt Gray (motlled) CLAY		cr		-
		0.0			Hard and Dry				
26_		!	$\vdash \vdash$		No DNAPL odor or staining observed				_26
-			<u> </u>	i					[- :
27_		0,0							_27
-					ļ		ĺ		-
_					į				<u> -</u>
28_		0.0		i			1		_2B
					· · · · · · · · · · · · · · · · · · ·				- 1
an-							1		
29_		0.0	-						_29
-							ł		-
30		0.0							_30
_	Silt		Com	,,, č	NOTES In - make mos moltes				
					(i Indicates depth in feet	A Me.	WIRO	NMENTA!	
	Clay		Bedr	ock [(II-bgs - indicates lest below ground surface (II-ma) - indicates feet above means sea level			ONMENTAL ORATED]
	Sand				N/A - indicates not applicable to lists boung	四階 ′′′′	ع الروسان	JAN EU	I
					pom - indicates perts per militory				Ì

LOG OF BORING: TW-4-1 (con't)

Page 3 of 4

Γ		Γ_	_ <u>.</u>	T .		T	ة ا		7
ft-bgs		PID (ppm)	Blows/6-in.			.	Lithology USCS Chrestifeatle		l B
ب 0	Sample No.	<u>₽</u>	ê	_	SOIL DESCRIPTION (color, texture, moisture, etc.)		S S	Well Construction	30 Fr. 5g3-
_	7			3.9	30' - 35' Reddish Brown/Lt Gray/Yellow Orange (mottled)		CL		
-				1	CLAY Hard and Dry				-
1_		0.0		1	No DNAPL odor or staining observed				_31
7				1			3		-
2		0.0		1					_32
									-
-		0.0					4		
7	,						3		
-									-24
-		0.0		ł			3		_34
-				1			1		-
-	8	0.0		4,7	~35' - 38' Reddish Brown/Lt Gray/Yellow Orange (mottled)				_35
_	J			" '	CLAY		CL		-
-		0.0		}	Hard and Dry No DNAPL odor or staining observed				_36
-]			3		-
3		0.0							37
		0.0		-					-
-				1				1	-
-		0.0		ł	~38' - 40' Lt Gray w/ Yellow Orange flecks		CL		_38
_					CLAY V. Stiff and Slightly Moist		1		[-
		0.0			No DNAPL odor or staining observed				_39
_							1		-
-		O,D		1			1	:	40
-	9	5,0		4.5	-40' - 41' Lt Gray w/ Yellow Orange flecks		Cr]-
-					Silty CLAY becoming increasingly silty with depth V.Stiff and Dry				-
- -	· y	0.0			No DNAPL odor or staining observed	<i>[[]]</i>	}		_41
-		0.0			−41' - 45' LI Gray V. F-SAND some silt		SM		-
-				ļ	M. Dense and Wet No DNAPL odor or staining observed				_42
-					TO DITTE 2 GOOD OF STAIRING GUSCHYEU				_
1		0.0							_43
_									-
7		0.0]				ļ	_ 44
- -		0.0	•	1				İ	-··
-				1					~
+	10	0.0		4.2	45' - 50' LI Gray V.F-SAND some sili		SM		_45
-					M. Dense and Moist No DNAPL odor or staining observed				_
		0					<u>. </u>		_ _46
	Silt		Gra	avel	NOTES n - endeales inches		,		
		7772			ft - inducates depth or fee). (fr-logs - molecates teet below pround surface			ONMENTAL	
		2222			N-msl - extrances feet above mean sea level		NCORF	PORATED	
	Suit (· · · · ·			N/A - wakcates not applicate to this bovin.) ppm - endicates parts per milhon				

LOG OF BORING: TW-4-1 (con't)

Page 4 of 4

						1			
sac		(mqq)	Blows/0-in	Recovery			Lifhology	rs all carte	s6q-JJ
saգ. 11 46_	Sample No.			8	SOIL DESCRIPTION (color, texture, maisture, etc.) 45' - 50' LI Gray V.F-SAND somo sili		회	🖁 Wall Construction	1 (2) _46
-	,	0.0			M. Dense and Moist		ям	-	-
47_		0.0			No DNAPL odor or staining observed				_ _47
-									-
48_		0.0	<u> </u>					ļ.	_48
-								1	-
49_		0.0							_49
-			-						
50_	11	0.0		4.9	~50' - 54' Lt Gray Silty F-SAND (little fines)		SM		50
51_		0.0			V. Dense and Moist No DNAPL odor or staining observed				_ _ _51
-		0.0							
52_		0.0		i	SAMPLED 51-53 @1100 for TOC		1	}	
-									-
53_		0.0							53
-									-
54		0.0			~54' - 55' Reddish Brown/LI Gray CLAY (motiled)'	/////	<u></u>		_54
			$\vdash \vdash$		Hard and Dry No DNAPL odor or staining observed		Cr		
55_		0.0			Set TW at 55'		4-		_55
56_					Set I W at 55' Screened 40-55 Sand to 35				- - -56
-					Bent to 30				-
57_									57
-									-
58_			\sqsubseteq						_5B
-									=
59_			\vdash						_59
60 <u></u>			\vdash						-
-V_								Í	_60
61_			\vdash						- - 61
-				-					-
62									
	Sill	Ш	Gra	vel [NOTES In - indicates inches:	ew.	6 17		
	Clay	VIII	Bedr	ock {	h - indicates depth in feet H-bips - indicates feet before ground certaice	W	INCO	VIRONMENTAL DRPORATED	ļ
	Sand				• • • • • • • • • • • • • • • • • • • •			AN ONNIED	. }
					ppm - sudisnica conta per m.kezi				ļ



LOG OF BORING: TW-4-2

Proj Loca Date	nl Name: ect Number; ation; e/Time Started; e/Time Complete	05-11 Sout		alcad	te: Houston, TX 5/2005 5/2005	Drilling/Boring Method: Sampling Method: Subcontractor/Drilers: Advanced Dr Monitoring Equipment: PID Coordinates: N732903.29 / E3157537		Ground Measuri	ing Point E ist/Enginee	lev. (ft-msl lev. (ft-ms er: Bob B	1):	
sgd- fl c	Sample No.	PID (ppm)	Blaws/8-in.		可见到这个人的	DIL DESCRIPTION (color, texture, r	noisture, etc.)	Lithology	USCS	1771	Construction	0_0 ft-bgs
1 1 1 1	1	0.0		4.1	Soil looks loose and	ay Silty F-SAND s reworked d moist PL odor or staining observed			SM	3" PVC o grouted in	RARY WELL: uter casing n place: 0-25.0 riser 0-40'	- - - -1
2_ -		0.0									screen 40-55'	- - -2
3_		0.0										 _3 _
- 4_ -		0.0	_									- -4 -
5_ -	2	0.0		4.2		ay Silty F-SAND			sw			 _5
6_		0.0			loose and	reworked I moist *L odor or staining observed	**********	777777				_6 _
7_ - -		0.0			Sandy CL M.Stiff an	t Gray/Yellow Orange (moltled) .AY w/ some silt of Moist L. odor or staining observed			CL			_7 -
8_ - -		0.0			, No Brian	Local of Halling Bossifes						_8 -
9_ - -		0.0										_9 - -
10 - -	3	0.0		4.5	Sandy CL M.Stiff an	/Yollow Orange (motiled) AY w/ some sill d Moist L odor or staining observed			CL		·	_10 - - -
12_		0.0			11' - 15' L\ (Loose and	GraySilty F-SAND (little fines)			SM		į	
13_		0.0				•						_ _ _ _13
14_		0.0				No.					j	- - - _14
		Ш			3333	NOTES in - indicates inches ii - indicates depth in lett	Signature of F				Date	
	Clay		Bedr	ock {	***	II-bgs - indicates (oof below ground curlace ti-ms/ - indicates feel above mean sea level IATA - indicates not applicable to this boring	Roberts ?	hilh	м,			

LOG OF BORING: TW-4-2 (con't)

Page 2 of 4

٢		Τ_	Ė	1			1 -	<u></u>	_
		PID (ppm)	Blows/6-in.		SOIL DESCRIPTION (color, texture, moisture, etc.)	Lilhalaav	USCS		10
ft -bgs	Sample No.	<u>a</u>	â		SOIL DESCRIPTION (color, texture, moisture, etc.)	Š) SS 8	Well Construction	ft-bgs
14_	No.	0.0	(100 × 20)	38988	@ 14.5' to 15' Color Change to Reddish Brown	N. A. C. C.	SM		_14
-				┦	No DNAPL odor or staining observed				-
15_	 	0.0	<u> </u>	_					_15
	4			4.2	~ 15' - 19' LI Gray Silty F-SAND Wet and Loose				-
6		0.0			No DNAPL odor or staining observed				
-		0.0		1				•	-"
				1				}	-
7-		0.0		┨					_17
_							ļ		-
8_		0.0						}	_18
-						ł			-
9		_0.0						Į	_ _ _19
		1-2:2-		1	@ 19 Reddish Brown/LI Gray (molfled)	V/////		1	-13
				1	CLAY V.Stiff and Dry		CL		E
ㅁ_	5	0.0		4.0	No DNAPL odor or staining observed				_20
7	-			"	20' - 25' Reddish Brown/Lt Gray (mottled)				-
1		0.0			CLAY V.Stilf and Dry				_21
-					No DNAPL odor or staining observed]	-
,=	•	0.0							-22
1		0.0							-22
									-
3		0.0							_23
-									-
4		0.0			On 9/15/05 Augered to 24' and pushed 3" PVC Casing to 25' and grouted up			Bottom of Outer Casing	_24
_									-
-		0.0		Ì	Resume Drilling on 9/16/05				25
-[6			4.0	25' - 30' Reddish Brown/Lt Gray (mottled) CLAY		CL		-
,-		0.0			V.Stiff and Ory				
6_					No DNAPL odor or staining observed				_26
-		}							-
7-		0.0							_27
									_
		0.0							_28
-									-
		0.0							- 20
-		0.0							_29
_									-
		0.0			NOTES	<i>\\\\\\</i>	ì		_30
	SIII		Gra	re!	ar - ridicales arches				
	Clay	777	Bedi	rock	th - makentes depth on lost (t-bgs - makentes lost below ground surface	NE!	VVIRO	ONMENTAL ORATED	
					frynd - epic eles feel above mean sea level N/A - indicates not applicable to linc burng	- I	CORPO	DRATED	
	'				ppm - indicates paths per militari				

LOG OF BORING: TW-4-2 (con't)

Page 3 of 4

		Ê	ß-in.				i i		
ft -bgs	Sample No.	PID (ppm)	Blows/6-in.		SOIL DESCRIPTION (color, lexiure, moisture, etc.)	1	USCS	Well Construction	, # H
30_	ON LANGUAGE		10.31	1				Well Collstide Coll	30
-	7		ļ	3.4	30" - 35" Reddish Brown/Lt Gray/Yellow Orange (mottled) CLAY		CL		-
		1		1	Hard and Dry		3		ļ
31_		0.0	-	+	No DNAPL odor or staining observed		4		_31
-			<u> </u>	4			4		
32_		0.0					3		32
-									-
		1	-	1					
33_		0.0	<u> </u>	-					_33
				_			1		<u> </u>
34_		0.0					1		- _34
_		""		1			3		
-	•			1			1		-
35_	8	0.0	ļ	F .	26' 20' Park finis Danius is Carried State October 1-100-15		1		_35
-	8			5.0	35' - 38' Reddish Brown/Lt Gray/Yellow Orange (mottled) CLAY		CL		-
36		0.0		1	Hard and Dry No DNAPL odor or staining observed		1		-20
36_		0.0		1	NO DIVATE DODI OF STATERING DOSERVED		1		_36 _
-				-		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1		-
37_		0.0							_37
-		-	i						-
				ĺ					[-
38_		0.0		-	38' - 40' Lt Gray w/ Yellow Orange flecks				_38
_		1			Silty CLAY				_
39_		0.0			V. Stiff and Dry No DNAPL odor or staining observed				
-									-
		ł							_
40_	9	0.0		4.3	40' - 45' Lt Gray w/ Yellow Orange flecks				_40
_				7.5	Silty CLAY becoming increasingly silty with depth				_
41_		0.0		ĺ	V.Stiff and Dry No DNAPL odor or staining observed				_ _41
=				ĺ	····································		CL		_
_		0.0							_
42_		-					J		_42
		1					i		_
43_		0.0							- 43
_		5.5	\Box					ļ	- ''' -
-							l		-
44_		0.0					ĺ	ļ	_44
							}	İ	-
45_								ļi ļ	
**-	10	0,0		4.2	45" - 50" L! Gray F-SAND (little fines)	(////		į	_45
-					V. Dense and Moist		SM	-	_
46_		0,0			No DNAPL ador or staining observed				_46
	Sitt			svel	NOTES an - indicates a spinos				
		_			(i - endecajes, chapth in feet		ENVIR	ONMENTAL	
	Clay		Bedr	rock	II-bgs - indicates test below ground surface fi-mil - indicates (not above mean sea level	W 1000 1000		ORATED	
	Sand				N/A - indicates not applicable to this borning				
					pom - indicates parts per inities				ļ
									

LOG OF BORING: TW-4-2 (con't)

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							_			n
<u> </u>		PID (ppm)	Blows/6-fn.	wery.			Lithology	USCS Classification		, n
fi -bgs	Sample No.	0.0	Blow	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)	<u> </u>	Litho	USCS	Well Construction	ft-bgs
46_		0.0		200	45' - 50' Lt Gray F-SAND (little fines)		βά			46
-	'	""	L—	ļ	V. Dense and Moist			SM		_
47_		0.0			No DNAPL adar or staining observed					_47
-				İ						-
-										-
48_		0.0								_48
_										_
49_		0.0	<u> </u>	Ì					}	_49
-										-
50_		0.0								
30 <u>-</u>	11	0.0		4.2	~50' - 54' Lt Gray F-SAND (little fines)			SM		-50 -
-				1	V. Dense and Molst No DNAPL odor or staining observed					-
51_		0.0	\sqsubseteq		- · · · · ·					_51
_										_
52_		0.0	1 1	- }	SAMPLED 52-53 @1625 for TOC		1	1	[;	
-					-					_
_			$\vdash \vdash \vdash$					İ		-
53_		0.0						ļ		_53
-		Ì		ł				1		-
54_		0.0								_ _54
-[~54' - 55' Reddish Brown/Lt Gray CLAY (mottled) Hard and Dry		1		<u>;</u>	-
55_					No DNAPL cdor or staining observed			CF		
55_		0.0	-			<u> </u>	4			_55 _
					Set TW at 55' Screened 40-55					-
56				Ì	Sand to 38					_56
_					Bent to 34			1		-
57							1			_ _57
-							ı			_
				- 1			1	1	}	-
58_			-	j						_58
-										_
59_				- 1						_59
_				į					İ	_
60_				- 1				1		
-			-							_av
-							1	- 1	{-	-
61_								{].	61
-1									1-	-
62_									[-	62
	Phys.	الملكاء			NOTES		_1			
		Ш		ei [m - indicates inches II - indicates depth in feet	WA A	7,	ENV/IP	ONMENTAL	
	Clay		Bedro	ock 🛭	(I-bps - indicates feel below ground surface (II-ms) - indicates feel above mean sea level	PA	,,	VCOPE	ONMENTAL PORATED	į
	Sand						.,	· JUNE	~.AILD	ļ
					ppen - industria parts por militan					



LOG OF BORING: TW-5-1

Page <u>1</u> of <u>2</u>

Cliant N	Nama .	BEA	ZER	AST		Drilling/Boring Method:	Geoprobe	To	olal R	Soring De	oth (ff): 25'	
Project	Number:	05-1	13		ie: Houston, TX	Sampling Method: Subcontractor/Drillers: Advanced Dril	5 Split Spon	Gr	ดมกต	f Surface	Elev. (ft-msl) 50.33 Elev. (ft-msl) NA	
	ime Started:		9/1:	2/2005	5	Monitoring Equipment: PID		Ge	eolog	ist/Engine	er: Bob Balkovec	
Date/Ti	me Complete	d:	9/12	2/2005	<u>;</u>	Coordinates: N733131.46 / E3157501.	92	Co	nsul	tant: K	EY Environmental, inc.	
		(mdd)	G-in.	2			- <u>-</u> -		, a	nope		
t pas	Sample No.	PID (p.	Blows/6-in	Recov		OIL DESCRIPTION (color, texture, m	pieture etc.)		-Khology	USCS	Well Construction	ft-bgs
0_8	Sample No.				的特殊的可能的	全部的特殊的影響的學術的影響的新			1023		STEEL OF STREET STREET,	
! -	1			3.1	Top .3' Top:	soil		- !}) <u>}</u>	ML	TEMPORARY WELL:	-
_		0.0	\Box	1		low Orange/Lt Gray (motiled)				CL		Ĩ
['-]		0.0	\vdash			AY (Stiff and Dry) APL odor or staining observed					1" PVC: riser 0-5'	- [-]
-											screen 5-20'	-
2_		0.0	<u> </u>	ļ		v Orange/Lt Gray (mottled)				CL		_2
_			_			Silty CLAY (Stiff and Siightly Moist) PL odor or staining observed				3		Ŀ
3_		0.0								8		_3
-			_							3		
-				1								-
4_		0.0	 -	ł								_4
			<u> </u>		}					a		_
5_		0.0								3		_5
	2	1		4.8		w Orange/Lt Gray F-Sandy SILT		[[[[M	ML]	-
_			┢		T-clay No DNA	(Moist to Wet and M Dense) PL odor or staining observed						_
6_		0.0	<u> </u>		ļ							_6
7										∦	İ	-
7_		0.0										7
									Ш	1		-
8_	_	0.0	_							1		
°-	•	0.0			Wet at 8	,				ll .		8 _
-									Ш		ì	-
9_		0.0										_9
-			L.,		}			-	Ш]		-
10_		0.0										_10
_	3			4.7		ray Silty F-SAND			Ŭ.	SM	-	-
						Medium Dense PL odor or staining observed						-
11_		0.0			I							_11
7												-
12_		0.0										_12
-			Ì									-
	i	0.0			•							-
13_		0.0										-13
-		}										-
14		0.0								1		14
	Silt	Ш	Gra	vei {		NOTES in - indicates makes	Signature o	i Field S	Supa	rvisor	Date	
				rock [ft - Indicates depth in feet	i .					
				[AAXXI	fil-bgs - indicates feel below ground surface fil-msi - indicates feel above mean sea fevel	alunt		<u>X</u>	171	 _	
	Sand					N/A - industries not applicable to this being						

LOG OF BORING: TW-5-1 (con't)

Page <u>2</u> of <u>2</u>

		РіФ (врт)	Slowsf6-in.	Second Second	COIL DESCOPINATION		USCS Classification		ft-bqs
	Sample No.		ă	i a	SOIL DESCRIPTION (cotor, texture, moisture, etc.)			Well Construction] 21_14
-									-
		0.0							
- -	4			4.5	15' - 18.9' Lt Gray Sitty F-SAND Wet and Loose		SM		-
		0.0			No DNAPL odor or staining observed				16
ļ		10.0	_						ļ
		0.0	-						- ¹⁷
	·	0.0							-
			_						_ ¹⁸
									-
_		0.0			~18.9' - 20' Redish Brown/Li Gray (moltiled) Silty CLAY (Moist and Stiff)		Ċί		_19
					No DNAPL odor or staining observed				-
	5	0.0		1.0	Redish Brown/Lt Gray (motiled)		CL		_20
	-				CLAY (Hard and Dry) No DNAPL odor or staining observed		1		-
		0.0			At the Total of Disagning Sould FEU		į		_21
									_
		0.0							_22
									-
		0.0							_ _23
									_
		0.0							_24
									-
		0.0							
					Set TW-5-1 at 20' Screend from 5' - 20'	111111			_
					Sand to 3' Chips to suriace				_ _26
							1		-
					·	ļ			 - _27
							J	ļ	
			\dashv					į.	- -
			_				ļ	<u> </u>	_28 -
								-	-
									- -29
			=				İ	-	-
					NOTES			;	_30
		Ш			n - indicales inétes	A PET			
	Clay		Bedr	ock		W ^E	NVIRO	DRATED	
	Sand				N/A - indicates not application to this boring	祝曜′^	LURPE	ITAI EU	



LOG OF BORING:

TW-6-1

Client Name Project Num Location: Date/Time S Date/Time S	mber: Started:	05-11 South		ade: (15:25		Sampling of Subcontract Monitoring	ctor/Drillers: / Equipment: !	inuous split-s Advanced Dril	ling Systems		Ground S Measurin	Surface E sq Paint E VEnginee	n (It): 58.0 lev. (fl-msl) lev. (fl-msl) r: P. Sore Y Environe	49.48 NA	
	ngle No.	PID (ppm)		Месомелу	SC	IL DESC	RIPTION (color, texture, m	olsture, etc.)		Lithalogy	USCS		Constructio	
1_				SE	EE BORING LOG	FOR TW-6-	-2						3" PVC ou grouted in	iter casing place: 0-25.0	- - - -
-										,				riser 0-52.75' screen 52.75-5	7.75
3.3.4.		-													- - -
3_															-3 -
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14	sik {	 III)	Gravel		 X		NOTES		Sign	ature of Fle	eld Super	visor		Date	14
			Bedrock	***	₩	(1-60) - 1 (1-msi - 1	It - indicates depth wand cates test below go indicates feet below or indicates not applicable	round surface neam sea level		<u>`{</u>	· 	1			_

LOG OF BORING: TW-6-1 (con't)

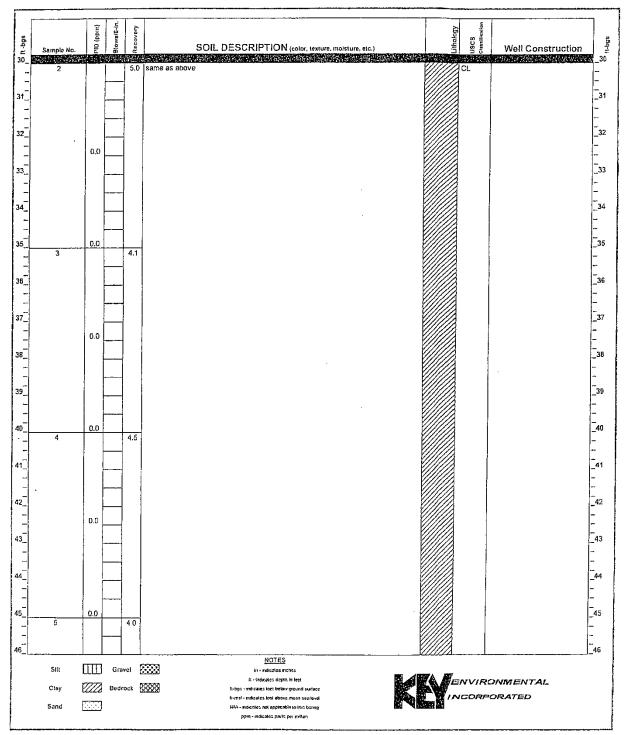
Page 2 of 4

							,		
,		PID (ppm)	Blows/6-in.	Recovery		ÁBO	leading .		1
5년 14_	Sample No.	힅) % (S)	Reco	SOIL DESCRIPTION (color, texture, moisture, etc.)	į, Lib	USC C	Well Construction	gG-1
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25_	1			3.0	 Red-brown CLAY with gray mollling. Stiff to very stiff, and moist. No observed DNAPL		ći	Bottom of Outer Casing	_25
-					stains or odors.		l		-
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	Silt				in - vidicates inches	A 197			
	Cray		8edro	ock 🛭	firbgs - indicates leet below grama durface (init() - suidcage, feet above ipean sea level)	WE!	VVIRO	NMENTAL PRATED	į
	Sand				, , , , , , , , , , , , , , , , , , , ,		احببر	"NO! EU	l
					ppm - videnins pivts for million				

LOG OF BORING:

TW-6-1 (con't)

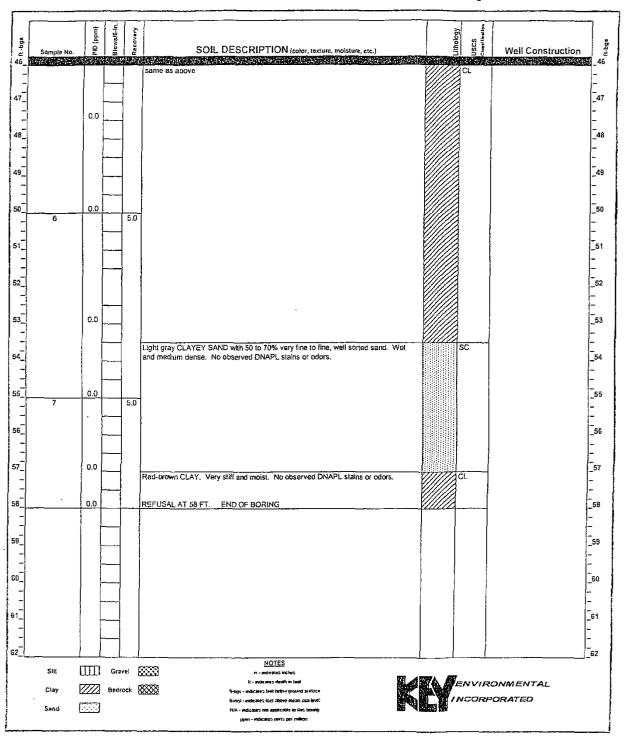
Page 3 of 4



LOG OF BORING:

TW-6-1 (con't)

Page 4 of 4





LOG OF BORING: TW-6-2

Client	Name:	BEA	ZER E	AST		Drilling/Boring Method: Direct push		Total Bo	ring Dept	h (ft): 20.0	
Projec	t Number:	05-1				Sampling Method: Continuous split-sp	oon	Ground (Surface E	lev. (ft-msl) 49.49	
Locatio		Sou			le: Houston, TX	Subcontractor/Drillers: Advanced Drilli	ng Systems			Elev. (ft-msl. NA	
	ime Started:			'05 14 '05 14		Monitoring Equipment: PID Coordinates: N731877.92 / E3157889.2	•	Geologis		er: P. Sorek	
Dale/T	ime Complete	20:	9/15/	05 14	:50	Coordinates: N731877.927 E3157889.2	<u> </u>	Consulta	nt: KE	Y Environmental, Inc.	
		TE	.Ė	_	T			T	5		
2		PID (spiri)	Blows/6	Recovery				Llthology	USCS	[<u></u>
ft -bgs	Sample No.	ē	è	9	sc	IL DESCRIPTION (color, texture, ma	Isture, etc.)	4	JSC 884	Well Construction	ft-bgs
0_8	A CONTRACTOR			200	DESCRIPTION OF THE PROPERTY OF			WWW.		HOSEN DOMESTICA CONTRACTOR AND	Reio ⊂
-	1	Ī		5.0	Asphalt and road m	aterials.				TEMPORARY WELL:	7
]					}	1" PVC: riser 0-7.75"	
_									ļ	screen 7.75-17.75	_
1_		1		1							_1
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-		ł		{					ļ		-
,-				1							-,
~-				İ	Black to dark gray	SANDY GRAVELLY CLAY. Approximately	30% fine sand and	111111	CL	7	~~
	•					ine gravel. Medium stiff and moist. Petrol			1		
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		Į.			Light gray SANDY	CLAY with approximately 30% fine grained	sand, and orange	1111111		1	
6_					mottling. Medium s	tiff and moist. No observed DNAPL stains	or odors.				_6
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-		1 5.5			Very soft and wet in	terval from 7.8 to 8.5'.					-
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	3			5.0		o CLAYEY SAND with approximately 80%	fine grained well sorted		sc]		<u> </u>
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						w indicates moties ti - indicates depth in tect	Signature of F	ield Super	visor'	Date	
						m - mácates mohes	Signature of F	ield Super	visor'	Date	

LOG OF BORING: TW-6-2 (con't)

Page 2 of 2

_ [PtD (ppm)	Blows/5-in.	Recovery		, , , ,	USCS		
50q-11-4_1	Sample No	. p	Blow		SOIL DESCRIPTION (color, texture, moisture, etc.)	Lithology	CSC 48	Well Construction	
4_# -					Red-brown and light gray CLAYEY SAND grading downward to red-brown CLAY with		SC		<u>_</u> 1
-		Ì	-	ł	tight gray mottling. Very stiff and moist. No observed DNAPL stains or odors.				-
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	Silt			vel {	NOTES **- macries native;		·)		
				rock {	91 - Macanies Inches 13 - Indicates depili ni feel	A DE	VVIRO	NMENTAL	
	Clay		De0:	DCK E	II-bps - indicates feet below ground surface II-mpl - indicates feet above meen sea level	\/\	CORPO	NMENTAL DRATED	
	Sand				N/A - indicates not applicable to the beamp ppm - indicates per to per million				



LOG OF BORING: TW-7-1

Locatio Date/Ti	Number:	05-1 Sout		cod 3 11		Orilling/Boring Method: Direct push Sampling Method: Continuous split Subcontractor/Orillers: Advanced Di Monitoring Equipment: PID Coordinates: N731470.35 / E315793	rilling Systems	Ground S Measurin	Surface E ig Point E V≊nginee	h (ft): 50.0 Elev. (ft-msl): 49.03 Elev. (ft-msl): NA er: P. Sorek EY Environmental, Inc.	
68q-1J 0	Sample No.	(Mpd) (Mpd)	Blows/6-in.	0.5	SC Asphault and road (DIL DESCRIPTION (color, texture, materials.		Lithelegy	USCS	Well Construction TEMPORARY WELL: 3" PVC outer casing grouted in place: 0-25.0' 1" PVC: riser 0-38.0'	sbq-ij
3_					Gray to light gray S sand. Medium stiff	SANDY CLAY with approximately 30% v and moist. Slight organic odor from 2.9	ery fine grained, well sorte: 5 to 5.0°.		CL.	screen 38.0-48.0'	
5	2	0.0		5.0							5
7_ - B_ - 9		0.0			·						-7 - - - - - 8 - - -
10	3	0.0		1.0							- - - - - - - - - - - - 11
12_		0.0				SANO with approximately 80% fine grained. No observed DNAPL stains or odd			SC		12 13
14	Clay		Grave			NOTES II - indicates incline; II - midicates incline; III - midicates conti in feet Indicates feet above mean sea level NIA - indicates feet above mean sea level NIA - indicates feet above mean sea level	Signature of F	ield Super	visor	Date .	_ 14

LOG OF BORING: TW-7-1 (con't)

Page 2 of 4

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ft -bgs	Sample No		Blows/6-in.	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)	Lithology	USCS	Well Construction	ft-bgs
14_		Wales.			T		SC		_14
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-	-			1.5					-
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-									-
17_]					
''-					Debugsted for a 47.4 for 47.7				-"
-		0.0			Saturated from 17.1 to 17.5'. Red-brown and light gray CLAYEY SAND grading downward to red-brown CLAY.		SC/CL	1	-
18_		-		{	Medium stiff to stiff, and moist to wat.				_18 _
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19_			ļ	{					_19
_			<u>_</u>	ļ					_
20_		0.0		<u> </u>	Red-brown CLAY with light gray mottling, and less than 5% sand and fine gravel.		CL	1	_20
_	5	:		5.0	Very stiff and moist. No obvious DNAPL stains or odors.			}	<u> -</u>
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			_						-
22_				}					_22
-									-
23_									_23
_									_
24_									24
									-
25_								Bottom of Outer Casing	
	6			2.3			•	Deliver of Color Cooling	
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27_									_27
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	Sit			avel (n - indicates inches	7A 89			
	Clay		Beda	rack [It-bps - indicates feet below ground surface	N EI	vviRC	ONMENTAL ORATED	
	Sand				It-mal - indicates feel abovo mean sea lovel N/A - indicates not applicable to thes borring		CORP		d.
					ррт - токалаг рег пэрсп			,	1

LOG OF BORING: TW-7-1 (con't)

Page 3 of 4

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		PID (ppm)	Blows/6-in.	je j		Ì	5		1
30" R -bgs	Sample No.	6	3lows	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)	Lifthology	USCS	Well Construction	20 8 - 30
30_	F16-60-978			1579A	SOIL DESCRIPTION (color, texture, moisture, etc.)			SHEET STREET	_30
-	7			5.0			CL		<b> -</b>
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35	8	0.0	-	4.5			,		_35
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36_		1	}						36
=					Orange-brown and light gray SANDY CLAY with approximately 20% fine grained sand. Soft to medium stiff, and moist. No observed DNAPL odors or stains.		CL		-
			$\vdash$		sand. Soft to medium suff, and moist. No observed DNAPL odors or stains.				-
37_									_37
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38_									
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39			Щ						_39
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40_		0.0			Yellowish-orange CLAYEY SAND with approximately 70% well sorted, fine grained	//////	sc		- 40
1	9	1			sand. Loose to medium dense, and moist to wet. No observed DNAPL stains or			i	-
-					odors.				<u>-</u>
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42			]		#				 42
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43_					Red-brown CLAYEY SAND with 40 to 70% line grained sand. Medium dense and		sc		_43
_					moist. No observed DNAPL stains or odors,			į	_
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45	10	0.0							_45
_	10			5.0					_
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	SIIt			vel	ft - underston denth in land	7A A7_			
	Clay		Bedr	ock {	/f-bgs - indicates feet below ground surface		NVIR	ONMENTAL ORATED	ļ
	Sand				H-mal - indicates feet above mean sea level  N/A - edicates net applicable to this being		<i>ICORP</i>	UKATED	1
					ppm - indicatos parte per militar	_			

LOG OF BORING: TW-7-1 (con't)

Page 4 of 4

						· · · · · · · · · · · · · · · · · · ·			
		P10 (ppm)	Blows16-In.	ç	SOIL DESCRIPTION (color, texture, moisture, etc.)	à	USCS Classification		
s5q-1J 46_	Sample No.	÷	S S	000	SOIL DESCRIPTION (color, texture, moisture, etc.)	Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint Joint	SCS	Well Construction	56q-) 62_46
46_				3 40			16.24	Well Construction	46
-							sc		<b> -</b>
		-		1					-
47_		ĺ	<del> </del>						_47
_		0.0							[_
48_		1							_ _48
_					Red-brown CLAY with light gray motlling. Stiff and moist. No observed DNAPL stains		CL		
-				}	or odors.				-
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}	Clay		Bedo	ock [	N-tigs - indicates lect below ground surface		NCOPE	ONMENTAL PORATED	1
	Sand	333			(kms) - kdichka i kati aktiva maan sea keval NAA - mdicaks nal apotzable ka hastarang		, SOM	JAN ED	J
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LOG OF BORING:

TW-8-1

Proj Loca Date	nt Name: ect Number: afion: a/Time Started: a/Time Complete	05-1 Sout		lcad 5 13:		Drilling/Boring Method: Direct push Sampling Method: Continuous split-sp Subcontractor/Orillers: Advanced Drilli Moniloring Equipment: PID Coordinates: N731220 49 / E3157323.2	ing Systems	Ground S Measurin	Surface El g Point El /Engineel	h (R): 52.0 lev. (fi-msl) 48.90 lev. (fi-msl) NA r: P. Sorek Y Environmental, Inc.	
o R bgs	Sample No.	PID (ppm)	Blows/6-In.	Recovery	SO	HL DESCRIPTION (color, texture, mai		Lithology	USCS	Well Construction	G-hgs
1 - 1 - 2 - 1	1	0.0			Light gray SILTY CI Medium stiff, moist.	LAY, with some orange and black mottling No observed DNAPL stains or odors.			CL	TEMPORARY WELL: 3" PVC outer casing grouted in place: 0-25.0" 1" PVC: riser 0-32.0" screen 32.0-52.0"	1
3 4 5		0.0									-3 - - -4 - -5
5 6 - 7 - 7	2			3.0							-5 - -5 - - - -
8 7 1 9 1 1 1		0.0									
10_	3	0.0		1.5	Light gray CLAYEY Soft to madium stlff	SiLT with orange and black motiling, approand motst. No observed DNAPL stains or	oximately 60% silt. odors.		NIT		10   11    12 
13_				$\Box$	Soft and wet from 13	NOTES	,				_13 _ _ _ _14
			Grave Bedro			in - endicates extends  In - redicates depin in teat  In-type - indicates feet below ground surface  (Firms) - endicates feet below ground surface  (Firms) - endicates feet them cannot be a level  NM - redicates not applicated to this borray	Signature of Fi	eld Super	risor	Date	-

LOG OF BORING: TW-8-1 (con't)

Page 2 of 4

S		PID (ppm)	Blows/B-in.	Recovery				Lithology USCS Clesellication		
sba-1	Sample No.	문	90	2	SOIL DESCRIPTION (color, texture, moisture, etc.)		YOR C	USCS	Well Construction	] ;
4_	SERVICE REPORT	CERVICE.	1	OF SALES	Light gray SILTY CLAY, medium stiff to stiff, and moist. No observed DNAPL stains	///	///	CL	Maria da Sara en de Maria. T	-14
_		ļ		-	or adors.					[-
5 <u>-</u>		0.0							1	_15
-[	4			4.5	Buff to light gray CLAYEY SILT with occassional orange mottling, approximately 60% silt. No observed DNAPL stains or odors.	IIII	Ш	ML	7	-
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-		0.0	<b> </b>	]   0.0	very soft and saturated from 17.5' to 18.0'.		Ш	ľ		-
-				1	soft and wet from 18.0' to 19.0'.	Ш	]]]	1		_11
-							Ш			<u> </u> -
-				1			Ш		•	
-				1	Red-brown CLAYET SILT, approximately 75% sllt. Moist and medium stiff. No	╫╫	╫	ML	†	-19
-			<u> </u>	0.0	observed DNAPL stains or odors.		$\  \ $		-	-
L		$\perp$				Щ	Щ	<u> </u>	]	_2
l	5	-		4.0	Red-brown to orange-brown CLAY with light gray mottling. Less than 5% silt, sand, and gravel. Stiff to very stiff, moist. No observed DNAPL stains or odors.			CL		-
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ـــ					NOTES Y	<u> </u>	111			]_30
	Silt	$\square$	Gra	rvel	in - indicates inches  It - indicates depth in feet  III - indicates depth in feet	74				
	Clay	W.	Bedi	rock	II - Escicação destri in seel  A-bigs - Endicates feet below ground surface	N.	<b>#</b> =	NVIRC	ONMENTAL ORATED	
	Sand				ti-mati - endicates feel above mean see level M/A - endicates not applicable to this terlang		//^	CORPO	DRATED	
					ppm - indicates parts per militari		-			

LOG OF BORING: TW-8-1 (con't)

Page 3 of 4

ft-bgs		PID (ppm)	Blaws16-in.	Recovery	SOIL DESCRIPTION (color, lexture, moisture, etc.)		thology	SCS	Moll Construction	R-bgs
±: 30_	Sample No.		ő		SOIL DESCRIPTION (color, lexture, moisture, etc.)		اد 1000	5 5	Well Construction	30
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4-				Į						34
_				1	Buff to light gray fine grained SAND. Well sorted, loose, and moist. No observed		s	w		-
-			-	-	DNAPL stains or odors.					-
5_		0.0		1						_35
-	8			5.0			1			-
6		1		7	}					
°-			<del>                                     </del>	1						-36
-		0.0	<u> </u>	ł						-
7 ]									4	_37
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				1						<u>-</u>
B_		1		1	Light gray SILTY CLAY with crange mottling. Approximately 10-20% slit. Very stift,	/////	3 C			_38
-			<u> </u>		and moist. No observed DNAPL stains or odors.					-
9_										_39
-		1			·		8			-
		İ	<u> </u>	1			8			-
°- -	9	0.0	<u> </u>	5.0	Buff, fine grained SAND. Well sorted, loose, and moist. No observed DNAPL		S	$\overline{}$		_40
_		1			stains or odors.					_
										_41
-				1						-
_		[	<del> </del>	1						<u>-</u>
-			<u> </u>	-					i	_42
7		0.0								_
			ĺ					1		43
-										-
_		1	<u> </u>		Light gray CLAYEY SILTY SAND grading downward to SILTY SAND. Medium		S٨	4	}	-
-{			<u> </u>		dense, moist. No observed DNAPL stains or adors,		1	Ì	ĺ	_44
_		İ								-
-		0.0						- }		_ _45
7	10	1		5.0					]	
-			_							_
		<u>L</u> _			HOLES					_ _46
	Silt	Ш	Gra	sveí (	NOTES  III - indicates inches		_			
					() a projecute's depth on lead		Ē٨	IVIR	ONMENTAL PORATED	
				(	h-msi - ridicates feet above mean sea level		N	ORP	PORATED	
	5and				HI/A - undicates not applicable to this being	- N				

LOG OF BORING: TW-8-1 (con't)

Page 4 of 4

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<u>.</u>		PID (ppm)	Blows/6-in.	Recovery		Lithatogy	USCS		
ւնգ. 13 46_	Sample No.	2	- M	250 250 250 250 250 250 250 250 250 250	SOIL DESCRIPTION (color, texture, maisture, cic.)		USC Classic	Well Construction	55q-¥ 46
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52_					REFUSAL AT 52.0 FT, FLOWING SANDS END OF BORING				_52 _
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"-								-	- ⁰ 1
62_								.	- _62
	Sin	Ш	Grav	rel	NOTES v indicates inche:				
	Clay				(1 - Indicates depth or feet  (5-bys - Indicates feet below ground surface	<b>V</b> E	NVIR	ONMENTAL PORATED	
	Sand						ICORP	PORATED	ļ
					ppm - indicates pails por million				j



## LOG OF BORING: TW-9-1

Client Name: Project Number: Location: Date/Time Started Date/Time Comple	9/14/05	ade: Houston, TX 9:55	Orilling/Boring Method: Direct push Sampling Method: Continuous split-sp Subcontractor/Drillers: Advanced Drilli Monitoring Equipment: PID Coordinates: N730601.31 / E3157309.13	ng Systems	Ground S Measurin	Surface E ig Point E VEnginee	h (ft): 25.0 iev. (ft-mst) 47.68 iev. (ft-mst) NA in: P. Sorek Y Environmental, inc.	
Sample No.			DIL DESCRIPTION (color, texture, mo	sture, etc.)	Lithology	USCS	Well Construction	li-bgs
2- 	0.0	Light gray SILTY Control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the cont	AY with 5-10% line grained gravel. Stiff an CLAY, medium stiff and moist. No observed CLAY with approximately 20% white weather observed DNAPL stains or odors.	I DNAPL stains or odors.		CL CL	TEMPORARY WELL: 1" PVC: riser 0-9.0' screen 9.0-24.0'	
14		sliff and moist.	MATER					- - _14
Silt Clay		<b>****</b>	NOTES  ## - indicates inches  ## - indicates inches  ## - indicates feel betwo ground surface  ##-mail - indicates feel above mean cap level	Signature of Fi	eld Superv	visor M	Date	
Sand			N/A - indicates not applicable to this boring					

LOG OF BORING: TW-9-1 (con't)

Page 2 of 2

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ft-bgs		РіО (прт)	Blows/6-in.	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)		tholog	USCS	Mall Canatavatin	li-bgs
ی 14_	Sample No.		Ē		SOIL DESCRIPTION (color, texture, moisture, etc.)		, i	5 5	Well Construction	<u>₹</u>   _14
_				1	·					-
15_					Light gray and red brown SILTY CLAY. Medium stiff and moist.		//	CL		15
-	4			5.0						_
16_		0.0								
-										-
17-										
-										F
18_		0.0		1						_ _ _18
-		"			Red brown CLAYEY SAND. Sand is very fine to fine grained and well sorted. Moist and medium dense. No observed DNAPL stains or odors.			SC		-
19_										- - 19
-				1						-` <b>.</b> "
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-	5			5.0						-
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-		0.0						ļ		
				ĺ						- 20
22_		1						1		_22
-				-						-  -
23_					Red brown to light gray CLAY. Moist and stiff to very stiff. No observed DNAPL			CL		_23
				}	stains or odors.					-  -
24		0.0								_24
- - 25										- 
:					END OF BORING	V////	4	$\neg \neg$		_25 -
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30	<del>-</del>			L	NOTES					_30
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	Clay		Bed	rock	(I-bgs - indicates leet below pround curface fi-msi - indicates feet indove mean sos level		ref Ni	vviko Corpo	NMENTAL BRATED	
	Sand				N/A - malicrates not applicable to this bening				- · -	



LOG OF BORING: TW-9-2

Proje Loca Date	n Name: ect Number: ation: Time Started: Time Complete:	05-1 Sout		ilcad		Drilling/Boring Method: Dire Sampling Method: Continu Subcontractor/Drillers: Adv Monitoring Equipment: PID Coordinates: N730882.55 /	ous split-sp anced Drilli	ing Systems	Measuring	urlace El Point E Enginee	n (ft): 20.0 lev. (ft-msl) 48.50 dev. (ft-msl; NA rr: P. Sorek Y Environmental, inc.	
o ft-bgs	Sample No.	PID (ppm)	Blows/6-in.	C. Recovery		DIL DESCRIPTION (cotory sorted sand and grave).	r. texture, mo	isture, etc.)	Lithelogy	USCS Classification	Well Construction	0 Frbgs
1_											1" PVC: riser 0-13.5' screen 13.5-18.5'	- - 1 - -
2 3	ì	0.0			Light gray SANDY fine sand. Stiff and	CLAY, with orange brown mot moist. No observed DNAPL	iling, and ap stains or odd	proximately 20 to 40% xs.		ZL.		_2 
4-												- - - - 4 -
5, 1 - 1 6, 1	2	0.0		3.5								-5 - - - - -
7_ - - 8_		0.0										- - - - - -
8.1 - 1.9.1 9.1												- 8 9 9
10_	3	0.0		5.0								- - - - 10 -
11_ - - 12_												
13_	,	0.0										_ _ _13 
14			Grave			NOTES In - spicaaes inches Ii - indicates depth ni leet II-bigs - edicates leet below ground		Signature of F	ield Supervi	sor	Date	14
	Sand [	::::3				fi-mai - endicates fee: noove meen s N/A - indicates not applicable to the						-

LOG OF BORING: TW-9-2 (con't)

Page 2 of 2

Sam	iple No.	PID (ppm)	Blows/6-in.	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)	lithology	USCS Classification	Well Construction	- 1
e, altain est	13.11.12.1 <u>3.13.13.13.13.13.13.13.13.13.13.13.13.13</u>							2001 0510-5010 -50100.00 00000 000	
		0.0							<u>_1</u>
	4			5.0	Light gray CLAYEY SAND with approximately 75% fine grained, well sorted sand. Very soft and saturated. No observed DNAPL stains or odors.		sc	1	Ŀ
									_1
					Red brown and light gray SILTY CLAY. Medium stiff to very stiff, and moist.  No observed DNAPL stains or odors.		CL		-
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				vel [	In - Indicates inches	7& <i>BI_</i>	VVIRO	NMENTAI	
			Bedr	ock - {	H-bgs - Indicated feet below ground surface	1//	CORPO	DRATED	
			Bedr	ock · {	In-tips - Infaceted Feel below grounds surface In-mid - Infacetes Feel below frozon soa lovel  ANA - Indicety not applicable to this braing  gram - Indicety parts por million	1/1	CORPO	NMENTAL DRATED	



LOG OF BORING: TW-10-1

Client Name: Project Number: Location: Date/Time Started: Date/Time Complete	BEAZER EAST 05-113 South Cavalcada: Houston, TX 9/12/05 10:20 d: 9/13/05 15:30	Drilling/Boring Method: Direct push Sampling Method: Continuous spiti-sp Subcontractor/Drillers: Advanced Drilli Monitoring Equipment: PID Coordinates: N730290.40 / E3157325.3	oon ( ing Systems N G	Ground Si Measuring	urface El Point El Engineer	r (ft): 55.0 lev. (ft-msl) 48.87 lev. (ft-msl) NA r: P. Sorak Y Environmental, Inc.	
seq. 3	PID (ppm)	DIL DESCRIPTION (color, texture, mo	isture, etc.)	Lithology	USCS Clessification	Well Construction	tt-bgs
0_	SEE TW-10-2 LOG				Section 1	TEMPORARY WELL: 3" PVC outer casing grouted in place: 0-20.0'  1" PVC: riser 0-44.0' screen 44.0-54.0'	
Clay	Gravel CCCC  Gravel CCCCC  Bedrock CCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCCC  Gravel CCCC  Gravel CCCC  Gravel CCCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC  Gravel CCCCC  Gravel CCCC  Gravel CCCC  Gravel CCCC	NOTES  In - inade alex forther.  II - indicates depth in feet  II-bys - inadecates feet below pround surface  Is-mys - winderates feet below more seal-level  NWA - inadecates not application to this boring	Signature of Field	Supervi	isar	Date	

LOG OF BORING: TW-10-1 (con't)

Page 2 of 4

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s6q-11 4		PID (ppm)	Blows/6-in.	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)	Lithology	SCS	Well Construction	
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B_									_18
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9_					·				_19
									-
o_  								Bottom of Outer Casing	_20
	1	1		4.0	Red-brown CLAY with light gray motiting. Less than 5% sill, sand, and fine gravel. Very stiff, and moist. No observed DNAPL stains or odors.		CL		-
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	Sand	(2228) [333]	_ , _ , _	i Ki	III-mid- indicates feet above meny use love!  N/A - who feets from appearable to this borry.	, N	CORPO	PNMENTAL PRATED	
	24ID	لننت			ppm - extenses costs per matern	MQ (DEC			

LOG OF BORING: TW-10-1 (con't)

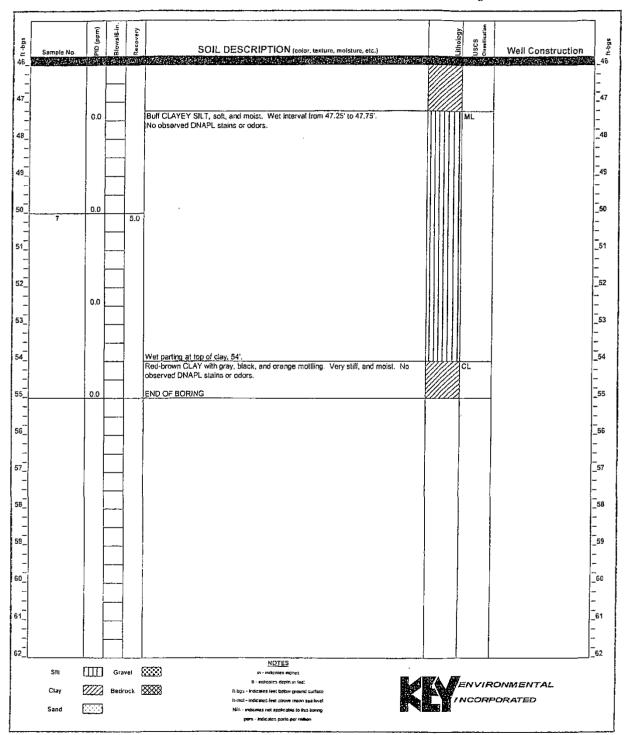
Page 3 of 4

1		PiD (ppm)	- <u>-</u>	5		}	5 <u>5</u>	
# bgs	i	1 6	Blaws/6-in	Recovery		Litholaav	USCS	Well Construction
1 =	Sample No.	=	ž	, è	SOIL DESCRIPTION (color, texture, moisture, etc.)	3	20 2	Well Construction 💆
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-	4			0,0	Red-brown grading downward to orange-brown CLAY. Less than 5% sitt, sand, and fine gravel. Stiff to very stiff, and moist. Occassional dry partings. No observed		CL	<b> </b> -
		1		1	DNAPL stains or odors.	V////		<u> </u>
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43_			$\vdash\vdash$		Orange-brown to buff SILTY CLAY. Medium stiff, moist. No observed DNAPL stains	YHHA.	CL	_43
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	Siti	Ш	Gra	ivel	NOTES  In - indicates section.			Į.
					ft - indicates depth in feet	<b>V</b> A <b>H</b> ∈	NVIR	ONMENTAL
	Clay		Bedi	rock [				ORATED
	Sand				firmsi - indicates test phone mean servi  N/A - andicates not applicable to this boning			SAA ED
					ppm - mócnica paris per malica	_		
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LOG OF BORING:

TW-10-1 (con't)

Page 4 of 4





LOG OF BORING: TW-10-2

Client Name: Project Number: Location: Date/Time Started Date/Time Comple	05- \$0 d:	-113 uth C: 9/1	2/05 B	de: Houston, TX 50 am 0:15 am	Drilling/Boring Method: Direct push Sampling Method: Continuous split-sp Subcontractor/Drillers: Advanced Drill Monitoring Equipment: PID Coordinates: N730289.91 / E3157320.4	ing Systems	Ground S Measurin	Surface E g Point E t/Enginee	n (fl): 20.0 lev. (fl-msl) 46.85 llev. (fl-msl', NA nt: P. Sorek Y Environmental, Inc.	
Sample No		<u> </u>	$T^{*} = 0$	SC No Recovery from	DIL DESCRIPTION (color, texture, mo	visture, etc.)	Lithatogy	USCS	Well Construction TEMPORARY WELL: 1* PVC: riser 0-10.0 screen 10.0-20.0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
2_ - - - 3_ 3_ - - - - - - - - - - - - -	0.0			Light gray GRAVEL DNAPL stains or oc	LY SAND with some fines. Poorly sorted, fors.	stiff, damp. No observed		GW		3 3
5_ 2 - 2 - 6 7 7 8 9 7 7 7 7 7 7	0.0		4.5		SRAVELLY CLAY with orange mottling. ( stely 50%. Poorly sorted, medium stiff, an  adors.			CL		
10 3	0.0		4.0	Gray SILTY CLAY. Istains or odors.	Approximately 40% sill. Very soft and web	. No observed DNAPL		SL.		
SIII Clay Sand			avel drock	5353 5888	NOTES  In - Indicator action  In - Indicator death in feat  It has a midicator death in feat  It has a midicator feat belong ground sustance  I-mist - indicator feat above mean can brein  NA - Indicator and applicable to this browning  ppm - indicator parts our million	Signature of Fir	old Superv	visor	Date	

LOG OF BORING: TW-10-2 (con't)

Page 2 of 2

Г	<u> </u>							~	
		PID (ppm)	Blows/6-in.	very		3	USCS Classification		_ ا
5년 14 14	Sample No	906	Blow	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)	i di di	USCS	Well Construction	lt-bgs
14_			13674		Light gray SILTY CLAY with orange mottling. Medium stiff, moist. No observed		ACL		14
~			<u> </u>		DNAPL stains or odors.		1		_
15_		_ _	<u> </u>		24.74		<u></u>		_15
-	4		<u></u>	5.0	Gray SILTY CLAY, very soft and saturated. No observed DNAPL stains or odors.		CL	ĺ	[_
16_		0.0							_16
-									-
-		-					1		- 
17_					Gray SILTY CLAY with red-orange moltling. Medium stiff and moist. No observed	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	CL		_17
-					DNAPL stains or odors.				-
18_		1	Щ		Red-brown CLAY with some gravel (-5%). Dry to moist, medium stiff. No observed	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	CL		_1B
_					DNAPL stains or odors.		CL		_
19_			L		•				_ _19
] -}									]-
20_					END OF BORING				- 
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30_		<u>ا ا</u>			NOTES NOTES				_30
	Silt			el [	ii - makeatos decili in teri	7A AT.			
	Clay		Bedro	ock B	ti-bps - indicatos feet below ground surface ti-mai - indicatos feet above mean soa level		v <i>viRO</i> coccc	NMENTAL PRATED	
	Sand				N/A - indicates incl. popularistic to this baring		CURPO	KAI EU	
					ppm - ridicases parts per million				ĺ



#### LOG OF BORING: TW-11-1

Page 1 of 2

	oject Number: 05-113				30	Drilling/Boring Method: Direct push Sampling Method: Continuous split-sp Subcontractor/Drillers: Advanced Drilli Monitoring Equipment: PID Coordinales: N730370.77 / E3157900.8	h (fl): 25.0 lev. (fl-msl) 48.25 lev. (fl-msl) NA sr: P. Sorek Y Environmental, Inc.				
Sample		PID (ppm)	Blows/6-In.	O.S.	SC Asphault and road	OIL DESCRIPTION (color, texture, mo	sture, etc.)	Lithology	USCS	Well Construction	-0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -
1										1" PVC: riser 0-12.2' screen 12.2'-22.2'	-  -  -  -  -  -  -  -  -
3		0.0		4.1		ILTY CLAY with orange mottling. Medium d DNAPL stains or odors.	stiff to stiff, and		CL		_3 - - - - 4 - - - - - - - - - - - - - -
6_ - - - 7_		0.0			Very soft and wel in	terval from 7.2 to 7.5°.					6  
8_ - - 9_ - 10_		0.0					į		į		
11_ - - - 12_		0.0				very soft and moist. No observed DNAPL			OL ML		
13		0.0			Black SILTY CLAY,	very solt and moist. No observed DNAPL	stains or adors.		50		
Silt Clay Sand	8		Grav Bedr		8888 8888	NOTES  in - moderates notices  A - node alea dephin lies!  Il-has - indexites feet below provind surface  Il-has - indexites feet below provind surface  Il-had - noticities feet above major are livel  N/A - not called not applicable to livis boring  proving - moderate portion per million	Signature of F	eld Superv	visor	Date	

LOG OF BORING: TW-11-1 (con't)

Page 2 of 2

รอิตุ- ม 14_	Sample No.	PiD (ppm)	Błows/6-in.	Recovery	SOIL DESCRIPTION (color, texture, moisture, etc.)				Lithclogy	USCS	Well Constru	uction	ft-bgs
14_	明 10年 日本 10年 10年 10年 10年 10年 10年 10年 10年 10年 10年			Series.	Light gray CLAYEY SILT with less than 5% sand. Soft and moist. Saturated parting	<b>2</b>		H	IIM	4.14	Seguesis de la	18 N. 18	_14
-		1			at 14.8'. No observed DNAPL stains or odors.	"			"	i.			-
15_			1	ł	Red brown and light gray CLAYEY SILT. Medium stiff and moist.		₩	╫	Нм	L	-{		_  _15
_	4	Ī	_	5.0	No observed DNAPL stains or odors.		Н	П					_
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-				1			Н	$\ $	Ш				-
-	-		一	1	•	-	11		Ш				-
18_		0.0	$\vdash$	}	Wet parting at 17.8'.	- ]]	$\ $	11					-18
-			<u> </u>	-									F
19_			L								1		_19
-		0.0			Wet parting at 19.5'.								-
		"."	_	1 .		- ]]	ĮĮ,	Ш			1		
20_	5	<u> </u>		5.0	•			H					_20
-					Soft and saturated from 20.5 to 22,0'.	-	Н	Ш					-
21_		0.0			SOLD IN ADDITION TO THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY O	∭			ľ		- Inches		_21
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22_													
-					Red brown CLAY, very stiff and moist. No observed DNAPL stains or odors.				Z CI				
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	Clay		Bed	rock {	(I-bgs - indicates lest below ground surface		W	ď	<b>=</b> ∧\	/IRC	ONMENTAL ORATED		
	Sand				11-mc1- indicates fort above mean sea leval  NIA - indicates not applicable to this boring		E	′′	VCC	)RP(	DRATED		
					ppm - márcates paris por milhon								- 1
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# APPENDIX B GROUNDWATER SAMPLE COLLECTION RECORDS



ENVIRONMENTA	u.
A SENVIRONMENTA INCORPORATED	

### GROUNDWATER SAMPLE WELL NO.: MW-25

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	ect Nan	uc: ordition:			95°F	rroject vo		ling Date:		7 - 1-	
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i i			NAPL:				oth to Water:		١٠.	38	(ft)
a. c.		th to DI					al Well Dept			28/ 28	(ft)
e.			ickness:	(n-b)		•	APL Thickne		(c-d)		- (fk)
g.	_		Vater Colur		7.63	(ft) (a-c			(0.47)		
h.		i Volum		.24		(ai)	·)·		Cor	version P	actor
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a.		ge Meth		18	w. Pra	ے برجہ انجمہ	GG	•	Well I.D.		Fact. (cf)
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c,					1f x 2c) (gals.	<del></del>			<b>Q</b>	<b>U</b> .10	1
d,					Vell Volumes		≈ 2.5 C	<u></u>	4	0.69	53
e.			Time: 14				4:40	2:	6	1.47	70
	Lapse	Purge		1		]		1			Water
Read	Time	Rare	Temp (°C)	pΗ	Spec. Cond.	Eb/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)	Variable and Date	(2.10%)	(±0.1)	( ,±3%)	(mV,110mV)	(mg/L.±10%)	(NTU,±1,0%)	%	G/L	(ft)
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San	aple An	alytical	Parameters	/Method	: Benze	ne and Naphtl	nalene via EPA	A Method 826	CB		
										<u>.                                    </u>	
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DOR	USHEE	N:									f
OMD	MENTS	;									ļ

#### JENVIRONMENTAL INCORPORATED

## GROUNDWATER SAMPLE WELL NO.: MW-26

					enemina in pr					-	ESTRUCTORY STATE RESTRECTION	
	ject No.				05-113		_Client:		Beaze	r East		
	ject Nan				th Caval		_Project Lo	-	uston, TX		r	
	ather Co			DATA (m.	NNY :	95°E			ling Date:	.0	09/19/0	25
Ü				APL:	_	from top of i		ing) pth to Water:	,	8,1	~	(ft)
23. C.				NAPL:				al Well Depti				(ft)
e.	-			ckness:	(a-b)			APL Thickne		F. 8/(b-2)		(ft)
g	_			ater Colum		10.63	(ft) (a-c			(* 4)		(1.5)
h		-	olum		1.73		gal)	-,		Cor	nversion F	actors
1	VELL P			***************************************	<del>-1</del>		, ,				(a x cf = 1	b)
2.	Pur	ge N	/leth	ed: Pp	ATZ S	JIC DUMP				Well LD.		Fact (cf)
Ъ.	Field	T	estin	g Equipme:		oriba U-22			******	1	0.0	
c.	Req	uire	ed To	tal Purge \	Volume (	1f x 2c) (gals.	):			1	0.10	63
d.						Vell Volumes :	Removed:	<u> </u>	EAL.	4	0.6	53
e.		n P	urge	Time: 15	100	End Pu	rge Time:	15:36		6	1.47	70
<b>.</b>	Lapse	1	urge	7' (90)			E1 1000	D) 02	TUTOE	[ C. 1/2 1/4 ]	TDC	Water
Read No.	Time (min.)		Late	Temp (°C)	#q (£0.1)	Spec. Cond. (nS/m±3%)	Eh/ORF (mV,±10mV)	Diss 02 (mg/L,±10%)	TURB (NTU,±10%)	Salinity %	TDS G/L	Level (ft)
			AY U	The same and the same of								
400-20-20-2	Congression of the second	707		Season and Superintal Distances				i de la la de la la la la la la la la la la la la la				THE MANAGEMENT
TVI	Control (Maria All A	3-6	A	29.5	7.34	0,140	-118	5.45	0.0		 Geografication Statistic	8,57
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1	10			78.7	7.30	0.136	-137	0.49	0.0		_	808
2	15		\	28.6	7,37	0,1210	-178	0.00	0.0			8.84
3	Q Q			29.0	TAI	0.115	-192	0.00	۵,۵		_	8,94
4	<del>2</del> 5			29.0	7,43	0.113	-197	0,00	٥.٥			۵,00
5	30			29.0	7,43	0.115	-200	B. <i>0</i> 0	0.0		-	9.05
(جا	35	•	V	28.8	3.45	0.112	<u>- 200</u>	<u>0,0</u> 0	00			9.11
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S. SA	MPLE	C	OLL	ECTION.	DATA		Samp	ding Persona	el:	R Ti	シシドーイ	
Sar	mpling l	Act.	hod(a	5) & Equip:	: 14	n Fian	Pricising.	TIV RUGUE	2			
Sar	nple I.D	, (N	lame	, Date, Tim		W. W. OO	1 1	-				
	· · ·			Parameters	, —				A Method 826	50B		
	•	-										
Sar	nple Sta	rt I	ime.	5.30			End Sampl	leTime: ~				
	ID REA					··		el & lonization	on Poten tial			
	R/SHEE		•									e e
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JENVIRONMENTAL INCOMPORATED
INCOMPORATED

GROUNDWATER SAMPLE WELL NO.: OW-CO

Project No.:				05-113		Client: Be				THE COLUMN TWO	
Project Name: South Cavalca					onda.		cution: Be		er East		
		ndition:		MY :		Troject Co		ling Date:			·
			الرنشان ساسب		from top of i	nner well cas		mng Date:	<u></u>	04/30/	05
<b>4.</b>					7		pth to Water	:	5.0	نا لتــــــــــــــــــــــــــــــــــــ	(ft
c.	Dep	th to DP	APL:		(:	ft) d. Tot	al Well Dept	dn:	- <i>∠.≥.</i> ⟩ , <i>†</i> ' )		(11
e.	LNA	LPL Thi	ckwess:	(a-b)	(1	ft) f. DN	APL Thickn	ess:	(e-d)		(ft
g.		_	ater Colur	met:	11.14	(ft) (s-c	i)				***************************************
h.		Volum	********	1.82	(1	(la			Co	nversion F	acinis
2. W	(4 × 0) - 11)										
a. Purge Method: ican Frank Praisonant Plane Well LD. Com. Fact. (cf)											
b.			g Equipme		oriba C-22		,	· Pierre	1	6.04	4!
c.					If x 2c) (gals.			<del></del>		0.17	1
ď.					Vell Volumes		<u>~35</u>	.eau	4	1), 63	!
<del>- <u>+</u>.</del>	Lapse	Purge	Time: 09	135	End Pu	rge Time: (	0:00	<del>1</del>	6	1.47	رياس _{ما} روسيس ميه موجه
besi	Time	Rate	Temp (°C)	рĦ	Spec, Cond.	EWORP	Disc O2	TURB	Salinity	TDS	Water Level
No.	(min.)		(± 10%)	(± 0.1)	(MS/#3%)		(mg/Lut19%)	2		G/L	(ft)
					$(0.3)_{0.1} = \overline{y}$						
100		3-1				Chinasa hadansa		23.0	and Market Mark		ANGERS AND
					55,5	-270	8.71		E NORTH SAND		4.00
		-com/									
1			238	10.45	52.6	-304	0.59	10.2			610
2			24.2	10.34	1524	-311	0.00	0.0			6.87
3 <u> </u>			24.3	10.40	52.0	-318	r.co	0,6			6.07
4			24.2	10.46	Gl.7	-325	బ.తర	0,0			607
5			24.3	10:48	51.4	-329	0.60	0.0		_	10.00 T
1	V	W	24.3								
<u>6</u>	<del></del>		- <del>21. 3</del>	10.52	-51.1	-333	0.00	00			7.27
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SA	MPLE	COLL	ECTION.			-	ding Personn		2777	PET	
Sam	pling l	Tethodi(s	s) & Equip:	: <u> </u>	مر التراجي	PERISTA	سالات تاديم	~52 <u>~</u>			
Sam	ple LD	. (Name	, Date, Tim		s cicoli						
Sum	ple An	alytical	Parameters	Method	: Benze	ne and Naph!	ialene via EP.	A Method 820	50B	. <del> </del>	
Sam	ple Sta	rt Time:	10105			End Sampl	e'['ime;				
		DING(s			I	'TD/FLD Mod	el & Louizati	on Porential			
oor	SHEE!	N:									Į.
SMIM	CENTS.	:									Ę



#### GROUNDWATER SAMPLE WELL NO.: OW - OF COLLECTION RECORD

	COLLECTION RECORD PERMIT NO.:										
Pro	ject No.	:	(	05-113		Client:		Beaze	r East		
	ect Nar			th Caval		Project Loc	cation: Ho	uston, TX			
		ondition	Suni	N4 : 1	60°F			ling Date:		vals lo	১ন
1. V	VATER	LEVEI	DATA (m	easured	from top of in						·
a.		th to LN				•	oth to Water:	_	9.	2	(ft)
c.	_	th to DN			<del></del> `		al Well Dept		110.	<u>00</u>	(ft)
e.	e. LNAPL Thickness: (a-b) (ft) f. DNAPL Thickness: (c-d) (ft)										
g.	g. Length of Water Column: (col) (ft) (a-d)										
	h. Well Volume: 1 14 (gal) Conversion Factors										
2. W	2. WELL PURGE DATA (a x cf = h)										
а.											
b.		-	g Equipmen		oriba U-22		<del>.</del>		i	0.0	
C.					1f x 2c) (gals.)				2	0.16	i
d.					Vell Volumes		<u>≈4.5 G</u>	<u> </u>	4	0.65	1
e.	Lapse	n Purge	Time: 15	<u> 130 -</u>	Ena Pu	rge Time: \i	<u> </u>	·	6	1.47	70 Water
Read	Time	Rate	Temp (°C)	Hq	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)		(± 10%)	(± 0.1)	( ,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
PRE	PURGE	VALUE							4		
INT		Accomy.	24.3	7.40	61.8	2-7	7.00	64.3	_	_	9,723
	بياء سنسوي زرات لاداره	TUES	こん じょうしょく しょうしょう かいしょう								Yes
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1			26.0	7.21	59.8		0.55	40.4			9.70
2	+		25.5	7.00	<u>ي. 55. ا</u>	18	0.00	70.85			9.70
3	-	-	25.6	(0.56lp	<u>65.3</u>	30	6 00	53 4 99.57	<b>—</b> .,		970
4			25.4	6.82	<u> </u>	-38	0.00				9.65
5			26.8	÷.88.	58.2	3	<u>0.00</u>	158		·	9.70
ا ما			27.0	7.14	58.4	14	0.00	52.0			9.40
7			26.7	7.30	59.3	14	8.00	40.8			0F.P
8	4		26.6	7,32	60,1	16	0.00	43.2			OF. P
9	A	M	Cb (5	7.33	1001	20	6.60	41.6			9:31-0
		-	·			-				<del>  </del>	
·											
							-				
S. SAMPLE COLLECTION DATA Sampling Personnel: Q TIPPET											
Sampling Method(s) & Equip: FICIL PERISTRICTIC P. MAD											
San	uple I.D	. (Name	, Date, Tim		o.v.J - වීවී ් ලාල					_	
			Parameters				nalene via EP	Method 826	OB		
	*										
San	aple Sta	rt Time:	16:15		<u> </u>	End Sampl	eTime:	<u></u>			j
		DING(s		<del></del>			el & Ionizati				
	VSHEE		,		•		231110401				
	OMMENTS: FD2-TAKEN										

				05-113	COLLECT	Client:	VINE C	RMIT NO.	- Y^	-	**********
	iect No.: ect Nan			th Caval	ende.	Project Lo	ration: Ha	Beaze	r Easi		
~	ther Co			1MM:		2 03 0 5 0 1.00		ling Date:	~	en 20	1 mg -
Lγ	VATER	LEVEL	DATA (n	easured	from top of i	nner well can			_	- 1100	(0:3
R.			IAPL:		(		pth to Water	••••	<u> </u>	2	(£
c.			NAPL:				tal Well Dept		_16.	92_	(1
e.	c. LNAPL Thickness: (a-b) (ft) f. DNAPL Thickness: (c-d) (ft)										
g. 'n.		guroim Voluma		:3A	8,20	(ft) (a- gal)	4)		1	nversion F	
	ÆLL PI			7.	V	y,			(.)	(ឧ.x ១f ≈ !	· · · ·
u.	Purg	e Meth	o <b>d</b> : _ <u>نن</u>	حاج د	J-PERS	TELTIC R	~ <del>`</del> ~		Weil L.D.		Fact (cf)
b.			g Equipme	nt: <u>H</u>	oriba U-22			~	1	6.0	4!
c.					1f x 2c) (gals.			<del></del>	0	0 i	
d.			e and Nun Time: 12		Vell Volumes		~ 4 G	mari_	- 4	U.6.	
#.	Lapse	Purge	11me: 75	. <i>0</i> 0	Luuri	Tec 1 ane:	12:40	7	6	1.4	Water
end	Time	Rate	Temp (°C)	pH	Spec. Cond.	Eb/ORF	Disc O2	TURB	Salinity	TDS	Level
Vo.	(mist.)		(± 10%)	(± 0.1)	(**Et, M(//::)	(mV,±)8mV)	(mg/L,±10%)	) (NTU,±10%)	%	G/L	(ft)
77	5	322 W	27.0	17.65	0.134	-75	3.48	-74. C			9.42
			25.3	7.21	0.128	-59	0.05	_ 4.E			9.73
2			25.4	7.14	0,120	-43	0.00	22.5		ب	9.76
5			253	7.14	0.117	-34	0.00	0.0			9.82
ŧ ]			25.4	7.22	<u> </u>	~ 3°S	0,00	0.0	g a gardina		9,72
5			2.5.4	7.32	ONA	-34	6.00	ت. ت			9,79
e			25.4	7.45	0.113	- 37	A 00	0.0			9.77
<del>-</del>	-		25.4	3.4%	0.113	- 27	ا تان ق	0.0			9.78
8	7		25.4	7.51	0.113	-37	D. OD	ر ا ت . ت			9.78
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3. SAMPLE COLLECTION DATA	Sampling Personnel:	P. TIPPET
Sampling Method(s) & Equip: Low FL	MAN PLEASURE TOURS	
Sample I D. (Name, Date, Time): On Dicks	00/26/05/12:40	و سده و بود خده دده در در در در در در در در در در در در در
	Benzeue and Naphthalone via EPA Metho	
<u>-</u>		
Sample Start Time: 72 40	End SampleTime:	
PIDTID READING(s):	PID/FID Model & Ionization Pote	ntial
ODOR/SHEEN:		
COMMENTS:		
and transplacements in the American research reported to an extreme the second of the control of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the	man no se amendament. A ) assurente a emblé dell'imperiud dell'abordament (13 cm er 15 d. et am.) e a manipulation dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior dell'imperior	por a comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the comment of the



## GROUNDWATER SAMPLE WELL NO.: P. O. COLLECTION RECORD PERMIT NO.

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	ect N					05-113		_Client:	~	Beaze	r East		
N -	ect N		_			th Caval		Project Lo		uston, TX			
	ther					NNY :	from top of in			ling Date:		<u>al18 10</u>	5
Đ.					JATA (II IAPL:	iensui cu			ntg) pth to Water:		19.4	Cir.	(ft)
а, с.		-			IAPL:				tal Well Depti		·		(ft)
e.		•			ckness:	(a-b)			APL Thickne		4.9 2 (c-d)	.9	(ft)
g.	_				ater Colu		30.01	(ft) (a-d			()		
h.		_	Vol			, የሃ		gal)	•		Co	nversion F	actors
2. W	WELL PURGE DATA (a x of = h)												
a.	a. Purge Method: 1000 PERISTALTIC PLANT Well LD. Conv. Fact. (cf)												
b.					g Equipme		oriba U-22			<del></del> ,	1	0.0	41
c.							1f x 2c) (gals.			<del></del>	2	0.1	1
d.							Vell Volumes		₹4.56a		4	0.6.	
e.	Laps		Pur		Time: 00	1.30	End Fo	irge Time: 🕠	61.40	T	6	1.4	Water
Read	Tim	- 1	Ra		Temp (°C)	pĦ	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min				(± 10%)	(± 0.1)	(M5/m,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
RRE	PURG	PA	AL	JES									
INI		!	zcor		24.4	7.85	0.106	-32	4.16	554			20.63
PURC	Profession and Party	VA	LUE	CONTES		is to					n Dicara		
	i		1		24.4	7.90	83.2	-9	1.09	154		•	22.45
2				_	24.5	8.03	lele. R	-43	1,28	754			23.79
3					24.7	8.20	54.3	-11	2,06	148	_	_	24.33
4.					25.1	8.13	57.3	10	1.012	39.5			25,59
5					25.3	8.05	63.1	19	1.53	49.4		-	26.18
6					25,3	8.01	68,3	25	1.42	41,0			ابها، مل
7		1	_		25.7	7.98	73.4	28	0.92	36:7			26.98
8		_	·	_	24.0	7.94	7-8.3	3 /	6:33	23 رد			27.25
9				_	24.2	7.93	80.)	33	0.70	31.55		-	2.7 .44
10		$\perp$	_/	_	24.5	7.92	-86-6	34	0.33	32,0		-	27,59
11.		4		_	24.8	7.90	89.5	35	0.26	27. j			27-68
12		_		_	26.4	7.85	90.1	<u> </u>	0.60	28.2	-		27.74
13	1	$\perp$	1		26.7	7.85	90.4	37	0.00	27.4		~	27.80
IAL	4		O		26.5	7.84	9012	37	0.00	27.8			27.83
	SAMPLE COLLECTION DATA Sampling Personnel:												
	Sampling Method(s) & Equip: Law Flow PERSTALTIC PLAND												
	Sample I.D. (Name, Date, Time): Post call 8 (55, 10 A)												
San	nple A	\na	lytic	al l	Parameter	s/Method	l: <u>Benze</u>	ne and Naphti	nalene via EPA	A Method 826	50B		
					10:40			End Sampl		<del></del>			
	ID RI			cr(S)	<i>)</i> -		1.	מסנאו מדינימי:	lel & Ionizatio	on Potential			
	VSHE VENT					1							
ONU	MMENTS: MS MSO TAKEN												

4	ENVIRONMENTAL :
K	ENVIRONMENTAL :

#### GROUNDWATER SAMPLE WELLNO .: P-62R COLLECTION RECORD PERMIT NO.:

الحستالج		<u> </u>				0.5 4.40	المن والمبارع والمساوي	C17	كاليس ميسيوبونينانندال	THE RESERVE THE PERSON NAMED IN			
	oject No.: 05-113 oject Name: South Cavalcade				05-113					r East			
					SOUT	h Cavaic	cade	_Project Lo		ouston, TX		<del></del>	
Wea					TATACE	MINY	from top of i	nner well co		pling Date:	<u>C</u> '	9/19/0	5
11. W									ong) opth to Water	<b></b>		4	(fi
а. С.		~			VAPL:			• •	ital Well Depi		16.3		(fi
e.	_	~			ickness:	(a-b)			NAPL Thickn				
g,	_				Vater Colum		33.18	(ft) (a-			( )		(ft
h.		Well	-			5.41		gal)	•		Co	nversion F	actors
		LPU	ЛС	ŒI	DATA	<u></u>					}	(a x cf = 1	
a.	P	Purge	e M	ieth	٥d: <u>ن</u> ـن	N FLO	W. PERIS	MEJAC	Pump		Well I.D.	. Conv.	Fact. (cf)
b.				_	g Equipmen	nt: He	loriba U-22				1	0.0	141
c.		-				_	(1f x 2c) (gals.)				(2)	0.1	63
d.	d. Total Volume and Number of Well  e. Begin Purge Time: 12:155						24 G	<u>ar</u>	4	0.6	53		
e.					Time: \2	<u> </u>	End Pu	urge Time:	15:20	<del></del>	6	1.4	
Read	Lap Tin			irge ate	Temp (°C)	рĦ	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level
No.	(mir	1	140		(± 10%)	(± 0.1)	(')/^ ,±3%)		1	1	1 .	G/L	(ft)
PRE	1.00		悉等							1000 1000 10			A DEPUT
		all ax	300°		THE PROPERTY.	2000 A 7	CHARGE ENGINEERING			322415355535			A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A SECTION AND A
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لن		_		·1	27.2	9.07	0.186	-257	2.84	37.3			140,32
2			}		269	7.49	0.534	-208	0,31	14.5			16.01
3					24.0	7.52	0.132	-187	ව. වට	0.0		_	16.91
4		$\perp$			27.0	7.34	0.131	-181	0.00	0.0	-	-	16.92
5					)	7.19	6.130	-174	0.00	0,0		_	10.92
<i>ع</i> ا	$\mathbf{I}$		]		1	7.18	0.129	-174	6.60	0.0		~	14.93
	W	$/ \top$	4	1	1	7,20	0,129	-135	0.00	0.0		-	16.43
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		+		+		<del></del>		i	<del> </del>	<del> </del>			
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						, <u>_</u>		·		<u> </u>			
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<u></u>	MP	<u>г.</u>	<u></u>	VF.T.	ECTION	DATA		San:	pling Personr	_1,	<u> </u>	-~	
					s) & Equip:		<b>~</b> '	•			IT. R	DYEI	
		-			s) & Equip: ., Date, Time		<u>wa Fuzw</u>	1 1	ALTIC P	<u> </u>			
	-			-	-		, ,	1905, 17		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	CAD		
Sam	ibie '	Ana	lytu	C31 1	Parameters	Mietnoa	: Benze	ne and Naphi	halene via Er	A Method 826	<u> </u>	<del></del>	<del></del>
_		-,									<del></del>		
					: 12:50		<del> </del>	End Samp				<del></del>	
ID/FI				G(S	):		ŗ	STD/ETD Woo	del & lonizati	ion Potential			
DOR													
													,

ENVIRONMEN	TAL
INCORPORATED	,

GROUNDWATER SAMPLE WELLNO.: 9-03R

	· · · · · ·	VCORPOR	RATED		COLLECTI	ON RECO	RD PE	RMIT NO.:			
Pro	ject No.			05-113		Client:		Beaze	r East		
Pro	ject Nan	ne:		th Caval		Project Lo		uston, TX			
	ather Co		s: <u>දිර</u> ී	5 a Hu	acin			ling Date:		11000	5
1.					from top of in			~ A			
a					<del></del> '		oth to Water:	<u> </u>	5.65		(fi
C			NAPL:			-	al Well Dept APL Thickne		<u> 54.8</u>	<u> </u>	(fi
e			ickness: /ater Colur		<u>"એક તવ</u>	ft) f. DN (ft) (a-c		ess:	(c-d)		(fi
g h		gui oi vi J Volum		 5,4	36.1-1	(11) (a-0 gal)	1)		Co	nversion F	
	VELL P			3.	\i	5441)			Ç6.	nversion r (axcf=1	
2. a	Pur	ve Meth	od: \ /	الله الم	W Fol MAN	anis a			Well I.D.	· · · · · · · · · · · · · · · · · · ·	Fact. (cf)
a. Purge Method: Well ID. Conv. Fact. (cf.) b. Field Testing Equipment: Horiba U-22 1 0.041											
c.					1f x 2c) (gals.	):	1 Nag		(2)	0.1	
d.					Vell Volumes		21 consi		4	0.6	
e.	Begi	n Purge	Time: U	315	End Pu	irge Time:	21 grid 0855		6	1.4	70
	Lapse	Purge		*							Water
Read No.	1	Rate	Temp (°C) (± 10%)	pH (± 0.1)	Spec. Cond.	Eh/ORP (mV,±10mV)	Diss O2 (mg/L,±10%)	TURB (NTU,±10%)	Salinity %	TDS G/L	Level (ft)
		PO IN					(Hig/L,21078)	(NTU, 11076)	/ / ·	<b>公</b> 是	(II)
	1	7									
CATE IN TURAL	0370	CT . A. P. B. C. C. C. C.	172.7	11.57	0.165	416	9.60	337	0.1		33.8c
BUR	GING N	TUES					<b>金属等</b>				
ኢ	03.75	Dec	25.3	11.63	0.169	~5	8-23	32.1	O-1		1390
3	<i>9</i> 330	100	25.2	11.63	0.164	-   4	8.31	33.7	ĊΛ.		70.0K
4	03 <b>3</b> 5	100	75.7	11-63	0 169	- 31	8,30	47.5	5.1	<b>J</b>	39.63
5	0340		25-3	11.63	O.163	<i>i−3, H</i>	3,10	W7.1	ON		79.00
S	O345	160	55.3	Essi	ં મુખે	-3-1	8.03	u1.5	ن ا		21.00
7	0830	100	221	11.163	0.167	31	3-11	e4 & 1	0.1	-	34.00
ij.						· 23					
3	<u> ८८३५२</u>	100	1-6.6	11.153	P34-0	* 2 %	8.01	480	1.0		34-00
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			TO CODY C N I		l.				- 7	<u>.</u> ].	
			ECTION		(2)		oling Personn	el:	60		
			s) & Equip:		exposes Prin				·····		
			, Date, Tim		1038 \ A		100			<u> </u>	
San	Sample Analytical Parameters/Method: Benzene and Naphthalene via EPA Method 8260B										
	nple Sta		<del></del> -				eTime: "X1				
	ID REA		):		I	'ID/FID Mod	el & Ionizati	on Potential			
	RISHEE										
COM	MENTS	:									•

ENVIRONMENTA	ſ
E CONTROL OF	-
INCORPORATED	

# GROUNDWATER SAMPLE WELL NO.: > 04 COLLECTION RECORD PERMIT NO.:

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	Project No.: 05-113 Client: Bear						Beaze	r East		· · · · · · · · · · · · · · · · · · ·		
	ect Na						Project L		ouston, TX			,
	ther C			يمريح ::	14人;	80'F			oling Date:	0.	9/18/	05
1. W					easured	from top of i						
а.				(APL:				epth to Water		<u>75,</u>		(ft)
c.				IAPL:				otal Well Dep			<u>, 74</u>	(ft)
е.				ckness:	(a-b)		•	NAPL Thickn	ess:	(c-d)		(ft)
g.		_		ater Colur		33.46	<del></del>	-d)				<del></del>
h.		ll Vol			:45	(	gal)			Con	nversion F	
2. W	ELL I						,				h)	
а.		ge M				w Peru	STALTIC	Prove	•	Well I.D.	Fact. (cf)	
b.			_	g Equipmen		oriba U-22		<del> </del>		1	0.0	
c.		-		_		(1f x 2c) (gals.	· —			2	0.1	
d. Total Volume and Number of Well Volumes Removed: = 4GaL  e. Begin Purge Time: 07:55 End Purge Time: 05:35									4	0.6	Į.	
e,				Time: 57	<u>:55</u>	End Pr	arge Time:	<u> </u>		6	1.4	
Read	Lapse Time	Pu	_	Temp (°C)	pH	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level
No.	(min.)	1 10	1E	(± 10%)	(± 0.1)	( ,±3%)	(mV,±10mV	i i	1	%	G/L	(ft)
-stranders/se	Las. COS 90 156	ASSESSED OF THE PARTY.	77									
1	URGE	3777¢	77								A reference in the large in	
NT	5		m	2ip.4	7.76	76.171m	19	5.87	5.7		ansored has	20.68
PURC	ing v	AL UE	S.									<b>多数为证</b>
				26.0	8.99	74.6	31	3.46	18.6			20.74
2				25.9	9.02	75.4	39	2.51	45.3			20:44
3	1.			26.0	80.7	93.9	41	0.36	17.7			20.76
4		ļ		210.0	7.87	0.10331	18	0.00	16.9		~	20.77
5		<u> </u>		26.0	7.84	0.1051	-56	0.00	16.5			20,76
0		ļ		24,0	7.83	0.105	-70	6.00	16.5			20,78
7				24.0	7.81	0.107	- 68	ර. ජට	16.6			20.78
8	$\underline{\hspace{1.1cm}}$	· \	/	26.1	7,78	0.1071	62	0.00	15.9			20.78
		<u> </u>										
		ļ . <u></u>					!					
						_						
3. SA	MPLI	E CO	LL	ECTION	DATA		San	npling Persons	rel:	RI	. P9€.T	
San	pling	Meth	od(s	s) & Equip	11	المحا اج العمر	ما المالية	ALTIC B	Carrier .			Î
			-	Date, Tim			105:08					
				Parameters				thalene via EP	A Method 826	ior		I
			,	, az azatolok i	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. Done	and and reaps	imatore via Li	A Monda oze			
C	mla C4	o set 'T''			_		m_2 c-	I - T2 :				
				<u>  68:35</u>	·		End Sam	<del> </del>	D / 42.1			
	D RE		G(S	) :			ניאו מניגומוט	odel & Ionizati	ion Potential		•	I
	/SHE											
COMM	(ENT	5: F r	١.	TANEN								ļ

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		NOORUPCH		12 p. (2) とうさんはない プレイト さいたま ロ	COLLECTI	KANTANAKIN PANAKIN JAMBAN TAKTAN PALI PENDA		ERMIT NO:	Nadžili čirligis sir ve franklik filozofica	1 (	SF-2
n	jeci No.:			05-113		_ Chent:	AND AND THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY	Denze	r Eust		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
₩ *	ject Nan	me: andition:		th Cavak	~~~~	Project Loc		onston, TX oling Date:			
B		•	مخذ بالبساء ساسب		from top of it	oner well car		ing nate:	گ	<u>59 20</u>	2105
12.		oth to LA	-		•		ptb to Water:	:	9.52		(ft
¢.	. Dep	ota to Di	NAPL:			ft) d. Tot	tal Well Depti	cha:	50	. <del>1</del>	(ft)
c.		APL Thi		(a-b)		-	IAPL Thickne	255:	(e-d)		(H)
e.		igth of ₩ II Volum	Nater Colum		41:19	(ît) (a-d	1)		(		
h. 2. W		u volum URGE I	*********	<u> 14.31</u>	(£	gai)			l	nversion F {axaf= i	1
2,. P.		ge Meth		i Wiles	A PERST	AIMI P.	- BLA	Janual acon	Well LD.		Fact. (et)
Ь.	-	••	ig Equipmen	at: H	loriba U-22	757	2000	miles C.	1	0.0	
c.	Requ	uired To	otal Purge V	Volume (	(1f x 2c) (gals.)				<b>②</b>	ů li	63
d. Total Volume and Number of Well Volumes Removed:										:).6.	
<u> 6.</u>	Begin Lapse	in Purge	e Time: 07	150	Eud Pu	arge Time:	1110	T	- 6 7	T - 1 4'	70 Wuter
Read	Time	Rate	Temp (°C)	1 1	Spec. Cond.	El-/ORP	Dies O2	TURE	Salinity	rns	Level
No.	(inin.)	- Consumeror	(± 10%)	(± 6.1)	( ,±3%)	(mV,±10mV)	(nug/L,£10%)	(NTT,±10%)	6,0	G/L	(N)
Inst	5	Boomy	24.	14-055	0.433	-141	1.56	39.2		,	10.99
)	A CONTRACTOR OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF TH		24.2	13 98	0.436	-15%	0.17	27.3			12.94
2	1		24.3	13.90	0.435	-155	0.00	22.3			14.30
3		-	24.4	13 89	T	-154	0.00	4.9			15.56
4		1	24.6	14.03	0.434	-161	0.00	8.6			16.59
5	-		24.7	14.72	0.433	-169	1	3.4-	- <del></del>		17.34
ن	-	<del> </del>	1		·	-172	0.00	3 4	<u> </u>	~~~	19.40
7	-		24.4	14.31	0.431	T	0 00	5.4			
3		j	1	14.32	0.430	-172	0.00	1	<del></del>		20,51
9			24,9	1	0.428	-170	0.00	24			21.60
		r- <b>-</b> !	7	14.23	0,472	\le7.	0.00	0.0			22,50
10			25.0	14.22	0.415	4 11e7	0.00	51-	_=+		23 w5
77			25.2	1 1	0.400	- 164	0.00	2A		·	24.76
12			3	1.23	0.373	- 144	0,00	1.57			25.69
13			25.7	iA.M	0.362	<u>- Nu3</u>	0,00	0.0			26,47
14		V	26.2	14.11	0.325	-142	<u>0.00  </u>	0.0			4.43
3. SAMPLE COLLECTION DATA Sampling Personnel: R TIGHT											
		•	(s) & Lynip:	, <del></del>		J 7 11 11 11	LTIL Ru	we/Bim	DEC		
			e, Date, Tim	Page 100 100	<u>os, oalso</u>			1	· · · · · · · · · · · · · · · · · · ·	y - 14 1 <del>- 18</del> 14   18 14 14 14 14 14 14 14 14 14 14 14 14 14	wet outlings to I make
San	aple An	alytical	Parameters	Method	i: Benze	ne and Naphil	halone via EPA	3 Method 826	<i>i</i> 0B	, ,	

End SampleTime: _____ PID/FIB Model & Ionization Potential

Sample Start Time: PID/FID READING(s):

COMMENTS: The MAKEN DOLLARS LIVE.

ODOR/SHEEN:

ENVIRONMENTAL
INCORPORATED

GROUNDWATER SAMPLE WELL NO.: \(\gamma\)

, J.C		NCORPO	RAJED	(	COLLECT	ON RECO	ORD PE	RMIT NO.:		, ' '	JOB 9-
Pro	ject No.	:		05-113	Client: Beaze				r East		
	ject Nar			th Caval	cade	_ Project Lo		uston, TX			
	ather Co				<u> </u>			ling Date:	_	a\.oako.	5
				neasured	from top of i		-				
a		th to Ll			· · · · · · · · · · · · · · · · · · ·		pth to Water:			<del>.</del>	(ft)
С		th to Di	NAPL: ickness:	(a-b)	<del></del> `	•	tal Well Dept APL Thickne		( -1)	<u>-</u>	(ft)
e	~		vater Colu		(.	ft) f. DN (ft) (2-0		288;	(c-ď)		(ft)
g h		l Volum		11411.		(1:) (2-) gal)	<b>-</b> )		Co	nversion F	actors
	VELL P				\\:	3***)				(axcf=)	
a.		ge Meth	od: B	NOOP)	any 5			•	Well I.D. Conv. Fact. (cf)		
Ь		_	g Equipme		loriba U-22		· · · · · · · · · · · · · · · · · · ·		1	0.0	
c.	Req	uired To	otal Purge	Volume	(1f x 2c) (gals.	):	4,000		2	0.1	63
d.	. Tota	ıl Volun	ne and Nun	nber of V	Vell Volumes	Removed:	13902	<u></u>	4	0.6	53
е.			Time: 113	ان ق	End Pt	irge Time:	ino	<u>,</u>	6	1.4	<del></del>
Read	Lapse Time	Purge Rate	Temp (°C)	Дq	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level
No.	(min.)	Kate	(± 10%)	(± 0.1)	(* .: ,±3%)	(mV,±10mV)	(mg/L,±10%)	1	1	G/L	(ft)
	PURGE	AZATTIEF	china ji di								
	T		7-5-5	13.70	C.471	KO	5.07		- A		27 30
15	A CONTRACTOR	icos	Committee of the committee of								
	GING V		1								
16	1.34	100	32.2	130.15	5 414	્રાંધદ્	9.17	68.3	0-3	. ~~	98.30
भि	105	50	367	10.14	C1 14 114	-153	1 43	4.9.8	5.3	*****	26 张
18	1530	537	11. 4	12:11:	(414 ر	-155	7.00	71.4	0 2		K.K.
۱4	10.15	50	36.5	17 14	() W. T	· 1272	1.74	63°C 7	0 3		J4.40
30	1010	50	76.7	17.70	0.434	· <b>!</b> 55	76.4	.18. F.C	0 }	-	D.33
	1032	50	A4. 3	17.7.7		·- (150)	3,34	73.3	03	*on	تن الآ
1.1		50				-164	1.35	1-3.1	$\frac{3}{0}$		
<u>J.J.</u>	1, 14,	<del></del>	765	12.35	ال الارام						31.01
1.3	10.45	50	310	13.35	<u> </u>	~16.3	3.51	Tr. y.	$\widehat{f}_{i,j_1}$ $\widehat{f}_{i,j_2}$		)1.04
ોધ	1070	S()	77.1	17 Jan	6.418		7. 3.	1.8.4	() 本	,4%	)į 11
<u> </u>	W55	50	455 T	17.76	্ নাই	~ <u>``</u> (;;\$	J. 74	-33 -4	03	·	34.17
$\Im \psi$	WOO	50	36 G	13.20	6.418		3, 31	68.Q	03		31 DU
السوز	45.4	150	1.5	17.77	i hely	~ <b>4</b> 5.44	1.30	و4.7	6 3		3i. 🖭
.,,,,		1. Kirs	Dagersk.			12.77					
		1 1 1 1 1	11077 370					- <del>-</del>			
3 54	MPLE	COLT	ECTION	DATA			oling Personn	al:	130	i	
			s) & Equip		no Flyin			CI.	1474.0	_	
			s) & Equip , Date, Tin		2-05/9/30		1	· · · · · · · · ·			
	•					<del></del>	7/1/2	V V - 4 1 000	(AD		
581	mbie wu	arytical	Parameter	s/Metno	i: Benze	ne and Naphti	nalene via EPA	A Method 820	מוטנ		[
0	1. 04		. 1.			TP- 10	Latte and the				
	mple Sta					End Samp					
	ID REA		s) :		1	TINETH MF00	lel & Tonizatio	on Poten tial			
	RISHEE			1 2	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya del companya de la companya del companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya de la co						Ĭ
LOWE.	いてたりょう	1.2.	Street N.	1 109 100 14	1000 July	" ST TOWNS					p



#### GROUNDWATER SAMPLE WELL NO.: "ZN - 20 COLLECTION RECORD

R	. "	ICORPO	RATED	(	COLLECTI	ON RECO	RD PE	RMIT NO.:			
Pro	ject No.	:		05-113		Client:		Beaze	r East		
Pro	ject Nan	ne:		th Caval		_Project Lo		uston, TX			
	ither Co		ıs: <u></u>	INY : O	15°F			ling Date:	<u>0</u> ,	9/12/0	255
1. 7				ieasured	from top of i		•			•	
a.			NAPL:		<del></del> '		oth to Water:		· 67		(ft)
c.		th to D					al Well Dept		20.	77	(ft)
е.			ickness:	(a-b)		•	APL Thickne	ess:	(c-d)		(ft)
g.		_	Vater Colu		12.44	(ft) (a-c	1)		<del></del>		
h.	WELL P	l Volun		<u> </u>	(2	gal)			Con	nversion F	
Ĭ		ge Meth				_	_		************	(a x cf = )	<del></del>
a. b.	-	-			oriba U-22	THE TILE	5-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	<del>'</del>	Well L.D.		Fact. (cf)
I	b. Field Testing Equipment: Horiba U-22 1 0.041 c. Required Total Purge Volume (1f x 2c) (gals.): 2 0.163										
d.											
е.			e Time: \3			irge Time: (4	4.10	<del></del>	6	1.47	
<b>-</b>	Lapse	Purge			J	<u>,</u>	1				Water
Read	Time	Rate	Temp (°C)	pH	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)	ALCON METAL AND	(± 10%)	(± 0.1)	(m5/m,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
PRE	PURGH	VALUE	St. Market								
יעז	5	3000	2ie.0	8.39	85.0	-208	3.12	0,0			7.89
A 100 P	INGV	HUES					起源的电池				物理验
1	2 /3524 W 12 /2		25.2	8.21	79.5	-195	0 000	0・ひ		Pri	7.89
2			1		· · · · ·		0.00		V		
			25,2	7.80	<u> キレ・ロ</u>	-163	0.60	0.0			<del>-1</del> ·88
3			25.3	7.50	73,4	-147	<u> </u>	0.0			7.88
4			25.4	7.39	72,9	-148	0.00	0.0			<i>∴ 88</i>
5			25.4.	7.47	72.4	-154	0.00	0.6	<b>-</b>	L	7,88
رہا			25.4.	7,57	72.1	- j (¿) (,»	0. ఆస్	0.0			7.88
7	_ \		25,4	7.61	72.0	-131	0,00	0.0	_		7.88
8	7/	V	25.5	7.61	71.9	-17-5	0.00	0.0		_	7.88
"		Y.	[ [ [ ]	1.101	<u>``-`</u> `	VTD	0.60	7.0			+100
-			<u> </u>				<del></del>				
							Ī		1		
	MPLE	COLI	ECTION	DATA	······································	Samr	ling Personn	<u></u>	0 -	PPET	_
			(s) & Equip			_	_		15	L. 1 12- (	
	-		e, Date, Tim		NO FICK					· · ·	
	_				N-20 , KG			Method 226	OB		
541	Sample Analytical Parameters/Method: Benzene and Naphthalene via EPA Method 8260B										
0	nnla C4-	_ሥ ቶ ጥ፡				T-4 C	oTi				
	id REA		14:10		1	End Sampl	lel & Ionizatio	n Potential		<del></del>	
	VSHEE:		٠, ره		1	LIVER CLEVE COLUMN	ies de guitteatif	du Earraith			
											į
<b>~(1111/1</b> )	MENTS										- 6



## GROUNDWATER SAMPLE WELL NO.: 7ZN-30 COLLECTION RECORD PERMIT NO.

				05 112		Circ	TCD TE	D.	77		
	ject No.			05-113		_ Client:	YY.	Beaze	r East		
	ject Nai			th Caval		Project Lo		uston, TX ling Date:		1-1	
		ondition!	S: <u>Sund</u>	JY : 95	from top of i			ing Date:	<u>0</u>	3/17/05	
B		oth to LN	•	ieasiii cu			nig) oth to Water:		_		(54)
` a.	~	oth to DN					tal Well Dept		.5		(ft)
с. е.	_	APL Thi		(a-b)		•	APL Thickne		10.22 (c-d)	<u> </u>	(ft)
g,			/ater Colu		2.72	(ft) (a-c		238.	(0-4)		(11)
h.		li Volum		.44		gal)	-,	•	Co	version F	iantorn
ī		URGEI		1.7.		>/			001	(axcf=)	
а.		ge Meth		. Dm.	PERISM	. TIC D			Well I.D.	·	Fact. (cf)
ъ.		_	g Equipme		oriba U-22	CIIC TIME	12.	<del></del>	1	0.0	
c.		-			(1f x 2c) (gals.	):		<del></del>	2	0.1	
d.	d. Total Volume and Number of Well Volumes Removed: $\approx 4.5$									0.6	ł
e.	Begi	in Purge	Time: \2	:০5	End Pu	irge Time: 🕠			6	1.4	70
	Lapse	Purge							Í		Water
Read	Time	Rate	Temp (°C)	pH	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)	TO SAME TO SAME	(± 10%)	(± 0.1)	(m5/m,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
PRE:		VANDE							1000		
M	5	700	26,2	7.92	8816	-135	2.13	0.0			7.41
PURC	ING V	ALUES.	That is								
١		i	25.3	7.75	85.4	-144	0.00	Ö. D	<b>1</b>		141
2			25.1	7.36	80.9	-(3)	0,00	0:0			-,42
3			25.3	7,25	77.2	-124	0.60	<b>4</b> .0			7.42
4			25.3	7.23	735	-130	5 · 00	4.6	_	-	7.41
5		<u> </u>	25.4	7.31	70.5	-137	0.00	4.8			7.41
6			25.3	7.47	69,0	-147	8.00	0.0		_	7.41
7			25.4	7.54	<b>७</b> ₹.₹	-155	00 . وح	0 . 52			7.39
8			25,3	7.63	45.7	-159	6.00	0.0			7,40
9	_		25,4	7.65	44.9	- Ye3	0.00	00			7,40
19	V	4	25.4	7.60	<u> ۳. تی</u>	-160	0.00	0.0			74.39
										-	
-						-					
. SA	MPLE	COLL	ECTION	DATA	<u> </u>	Same	oling Personn	 el:		)() E	
			s) & Equip			ŕ	•		R. TIE	<u> </u>	<del></del> [
	-		, Date, Tim		W FION			ł,		<u></u>	
	•			·	N-30, 09/1			V Mark and 202	an	<del></del>	
Sample Analytical Parameters/Method: Benzene and Naphthalene via EPA Method 8260B											
C	1 - Or					70 10 1					
			12:55			End Sampl					
		LDING(s	i) :		I	LINKIN Wod	el & Ionizatio	on Potential			i
	VSHEE										
'OMI	MENTS	i:									F

	ENVIRONMENTAL
KE	ENVIRONMENTAL INCORPORATED

# GROUNDWATER SAMPLE WELL NO.: 725 - 30 COLLECTION RECORD PERMIT NO.:

				05 112		Client:		Decree	. Yr 4		-
Proj	ect No.:			05-113		Project Loc	TY-	Beaze	r Last		
	ect Nan			th Caval		_ rroject roc		uston, TX		<del>-   -  </del>	
Wea	ther Co	nditions	5. <u> </u>	ANY :	from top of i	nner wall one		ling Date:	<u>0</u>	3/19/0	5
1. W		th to LN					oth to Water:	,	Ε,	54_	(ft)
a. c.		th to Di	_			•	al Well Dept				(ft)
e.		LPL Thi		(a-b)		•	APL Thickne		20,7 (c-d)	ــــــــــــــــــــــــــــــــــــــ	- (ft)
g.	-		ater Colu		14.82	(ft) (a-c			(0 0)		(15)
h.	٠, ١	l Volum		2.42		gal)	-7		Cor	version F	actors
		URGE I				,			1	(axcf=1	
a.		ge Metho		w Fla	w: PERIST	F DITIA	وشرس		Well I.D.	·	Fact. (cf)
b.	_	-	g Equipme		oriba U-22	1-1-2-5-4-1-1-2-11111111111-		<del></del>	1	0.04	
c.	Requ	uired To	tal Purge	Volume (	1f x 2c) (gals.	):			(2)	0.16	53
d. Total Volume and Number of Well Volumes Removed: 🔀 4 🖼										0.65	53
e.	Begi	n Purge	Time: Oc	1:20	End Pu	urge Time: 🕦	0:00		6	1.47	70
Ţ	Lapse	Purge									Water
Read No.	Time (min.)	Rate	Temp (°C) (± 10%)	pH (± 0.1)	Spec. Cond. (ハジ / ハ,±3%)	Eh/ORP (mV,±10mV)	Diss O2 (mg/L,±10%)	TURB (NTU,±10%)	Salinity %	TDS G/L	Level (ft)
	• • —	114(3/0)8032mg				(mv,±10mv)	(Mg/L,±10 /6)	(1(10,21076)	<b>大學的學術學</b>	UND TOTAL	described to the
PRESE	QRGE:	VALUE									
14	5	300m/	127.5	9.18	52.0	-187	5.54	0.0			6.52
PURG	ING VA	LUES								是里籍	
1	, ]		28.0	9.23	45.0	-238	0,07	0.0	_		4.69
2.			28:2	8.49	46.3	-249	a. 00	O.			ie . 60
3	1	!	27.9	8.07	47.9	- 252	ට. රට	0.0			is . 602
4			28.3	7.95	49.4	.252	6.00	0.0	_	_	نه. <b>نه</b>
5			28.2	7.83	51.0	-251	ව. පුදු	9.0		_	6.64
ا ما			28.1	7,79	52.7	-246	0.00	0.0		_	6.58
7		T	28.0	7:70	53 6	- 244	0.00	ت.٥	-		50.62
8	V	V	28.4	7,76	54.1	- 250	0.00	رت. ن		_	ني، ري /
							***			<del></del>	
	<del> </del>					<del></del>					
	—— <del>-</del>  -										
_											
						<u></u>					
			ECTION			Samp	ling Personn	el:	R TV	POET.	
	- ~	•	s) & Equip		1~ FI 13 4.	TER 15TO	LTIC BA	~ <del>-</del>			
					<u>5-307 09/</u>	19/05 10:	CD				
			Parameters					Method 826	0B		
					·		<del></del>		· · · · · ·		
			10:00		<u> </u>	End Sampl					
		DING(s	):		F	PID/FID Mod	el & Ionizatio	on Potential		-	
	/SHEE!										
OMM.	TENTS:	;									



#### GROUNDWATER SAMPLE WELL NO.: Pzs-40 COLLECTION DECODD DEDATE NO

				فالمتحدث المستحدث	OFFRCII			RIVELL NO.:			الحسيس فالمستحدا
<b>1</b> 1	ect No.:			05-113		_ Client:		Beaze	r East		<del></del>
	ect Nan		<del></del>	th Caval		_Project Loc		uston, TX			
	ther Co				95°F	n		ling Date:		19/17	155
		th to Li		ieasurea	from top of i		mg) oth to Water:			_	
( a.	Dep Dep	th to Di	VAPI.				al Well Dept		4.0		(ft)
с. е.	L N/	DY. Th	ickness:	(a-b)	<del></del> `		APL Thickne		(c-d)	14	(ft)
g.	ų.		Vater Colur		15.21	(ft) (a-d			(6.4)	-	(11)
h.		Volum		2.48		gal)	,		Co	nversion F	actors
	ELL P			<del></del>		, ,				(axcf=1	
a.		ge Meth		J FLEX	N: PERIST	ALTIC P.	~~~	,	Well I.D.	Conv.	Fact. (cf)
b.	Field	l Testin	g Equipme		oriba U-22				1	0.0	41
c.	_		_		1f x 2c) (gals.)				<b>②</b>	0.10	63
d.					Vell Volumes		24. €a	<u></u> -	4	0.65	53
e.			Time: 18.	3.0	End Pu	rge Time: (	9:15		6	1.47	
Read	Lapse Time	Purge Rate	Temp (°C)	рН	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level
No.	(min.)	24,24	(± 10%)	(± 0.1)	(~S/, ,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
PRE	RURGE	Varior		a en a	West State					<b>932</b> 3	of Pag
INT	<u> </u>	45 11/	129.2	10,26	70.0	-216	2.65	129.0			5.50
(PE384153)	AND FREE PROPERTY			10.20	29.9 World 1997				#1/23a75		
KAKC	HNG NA	HUES.						AND LABOR.			
1		1	28.0	9.75	24.5	-217	0.00	ا ما	-		5 65
2	_		27.9	9.38	25.4	-216	0.00	0,0			5.69
3			28,0	9.38	32,1	-221	6,00	0,0			5.68
4			28.0	9.18	38.5	-215	0.00	0.0		-	5.69
5			27.9	8.95	40.9	-210	0.00	0.0			5.71
اعا			27.8	87.78	41.16	~ 262	0.00	6.0			5.69
7			27.8	8,661	47.12	-197		0.0			5.69
8			27.8		7	<del></del>	0.00	0.0			
	1	- 1		8:58	42.4	-194	رين.٥				5.69
9			27.8	8.51	42.6	-191	0.00	D. 0			5.69
Γ				T						1	
B. SA	MPLE	COLL	ECTION	DATA		Samp	ling Personn	el·	P.TIT		
			s) & Equip		LOS FLONS	-	_			<u> </u>	- 1
			, Date, Tim		<u> 75 - 40', 60</u>			WV 1-3	•		
	-	-	Parameters					A Method 826	0B		
5411	apro Exti	-vî moar	a ar ariiviti		. Danze	no and ivapiti	mone via El7	11/10/11/04 020			
San	iple Sta	rt Time	. 19.15			End Sampl	eTime:				
	ID REA					PID/FID Mod		on Poteratial	<del></del>		
	VSHEE.		٠, ٠		1		w 1011114411	OIL E VECTI LIGI			Į.
	MENTS									٠	I



#### GROUNDWATER SAMPLE WELLNO .: PZN-50 COLLECTION RECORD

PERMIT NO.:

	ect No.	:		05-113		Client:		Beaze	r East		<u></u>
	ect Nan			th Caval	cade	Project Lo	cation: Ho	uston, TX			
,		nditions	: Sun	MY : 0	ic F	<del>-</del> -	Samp	ling Date:		29/17/	025
1. V	VATER	LEVEL			from top of i	nner well cas	ing)		_	- <del></del>	
a.	Dep	th to LN	IAPL:		<u> </u>	ft) b. De _l	oth to Water:	: <u> </u>	84.5		(ft)
C.		th to DN			(1	•	al Well Dept		20.10	\	(ft)
e.		APL Thi		(a-b)	(1	ft) f. DN	APL Thickn	ess:	(c-d)		(ft)
g.		<b>~</b> ,	'ater Colur		13.41	(ft) (a-d	I)				
h.		l Volum		19	(9	gal)			Co	nversion Fa	actors
2. W		URGE I								$(a \times cf = b)$	1)
a.	-	ge Metho	يه لي تبدعاله ي		PERISTA	IT I Plus	AP.	<u> </u>	Well L.D	. Conv.	Fact. (cf)
b.			g Equipme		oriba U-22					0.04	11
c.					1f x 2c) (gals.			<del></del>	2	0.16	1
d.					Vell Volumes		<u> </u>		4	0.65	l l
e.			Time: 11	60	End Pu	ırge Time: 🐧	1:35	T	6	1.47	
Read	Lapse Time	Purge Rate	Temp (°C)	PΗ	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level
No.	(min.)		(± 10%)	(± 0.1)	(\$/m ,±3%)	(mV,±10mV)	1	(NTU,±10%)	%	G/L	(ft)
OD II	PITEYRIE	VALUES									
	5	ATOM/		C 2C	orani sa sa sa sa sa sa sa sa sa sa sa sa sa	E AND THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF	A -	AN WALLESTON LEASE OF	FOCAL CROWN	CHANGE CHANGE COM	The second second
111		/MI	127.1	7.36	0.115	-206	4.15	<b>値・</b> ひ		narahas Tak	7,72
TIRC	ANG AV	LUES.									
1		i	25.5	8.64	0.111	-224	1.06	<b>-@</b> ℃		_	8.31
2			25.5	8.57	<u> 5.115</u>	-219	0.00	-60°. D			8.46
3			25.5	8.48	0.107	-213	0.00	0,0		_	8.51
4	ļ	1	25.4	8.42	0.104	- 208	0.00	0.0			F:51
5		,	26.5	8.37	0.104	-205	0.00	Ø, D			8.56
6	V	V	25.4	8,33	0.106	-202	n.00	0.0	_		8.57
				11.1.50	122 ( 22 22 22 22 22 22 22 22 22 22 22 22						
	-										
$\dashv$								-			
									<b></b>		
	1	ļ				"					
-											
	AADT E	COLL	ECTION	DATA	<u>-</u> l			<del></del> _			
							ling Personn		E TH	PPET	
	-		s) & Equip:	4	in Front			·			
					4.50 : 00/1						
San	ıple An	alytical.	Parameters	Method	l: Benze	ne and Naphtl	nalene via EP/	A Method 826	0B		
								<u> </u>			
			11:35	•——		End Sampl					
		.DING(s	):		I	PID/FID Mod	el & Ionizati	on Poten tial			į
DOR	JSHEE	N:									į
ΟMΝ	<b>IENTS</b>	:									- 1

5 Sp. 11	ž _
	ENVIRONMENTAL
KI	NCORPORATED

### GROUNDWATER SAMPLE WELLNO.: 725-60

					التراسد بساحه وعبوب		7.7			KIVIII IVU.:		ش مجاریم	وعد فنائجاني توريخ ومدارات
	ect No.				05-113	· ···		_ Client:	· · ·	Beaze	r East		
	ect Nan				th Caval			_Project Loc		uston, TX			
	ther Co			: <u>Simil</u> i	VY : 9	15°F				ling Date:	<b>T</b>	29/18/0	<u>)55</u>
1. V					ieasured	from top o		nner well casi			_		
2.				APL:			_ `		oth to Water:		5.9		(ft)
c.				APL: ckness:	(a-b)			•	al Well Depti APL Thickne			100_	(ft)
,e.				ater Colur		13.63	ـ (۱	(ft) (a-d		388.	(c-d)		(ft)
g. h.		gụi o l Vol			2.22	1.7. 6.7	(a	(At) (A=0	1)		Co	nversion F	actors
	ÆLL P						د/ د	,••••)			1	(a x cf = 1	1
а.		ge M			. Tim	N. Dian	- TY	ALTIC PR	ND		Well LD.		Fact (cf)
b.		-		Equipme:	nt: H	oriba U-22		11-11-1-11	10011	<del></del>	1	0.0	<del></del>
c.			_			1f x 2c) (ga	ls.)	):			2	0.1	
d.	Tota	ıl Vol	um	e and Num	ber of V	Vell Volum	es 3	Removed:	<u> 2569</u>	<u></u>	4	0.6	53
ε.	Begi	n Pu	rge	Time: 24	13:35	5 End	Pu	rge Time: \	4:15		6	1.4	70
	Lapse	Pu	_	T (0.57)		Spec. Cond	,	71.4077	Diss O2	TURB		and a	Water
Read No.	Time (min.)	Ra	te	Temp (°C) (± 10%)	pH (± 0.1)	Spec. Cont		Eh/ORP (mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	Salinity %	TDS G/L	Level (ft)
and design to the same	PURCE		EVICE P	ediatric Dalam district			機能				A4 60 T T T T T T T T T T T T T T T T T T	Paletial	LOCAL PROPERTY.
	, me-				PUTE NEW		對於		The second second				
MI	**************************************	50	O Jaile	28.(	8.26	7.7.6	ide (de la	- 2-il-	5,80	AU. ?		2012121212	6.76
RURC	INGW	LUF	S				32				<b>313.</b>	E PART	
1	1	1		28,3	7.74	ગા હ		-196	0,33	85.0			6.1010
2	÷			783	7.30	0.102		-163	ව වෙට	108			12.154
3	1			22.4	7.13	0.317		-152	0.00	£.11+		1	6.67
4				28.3	7.24	0.123	П	-157	5,6C	51.1			6,63
5				28.5	7.42	6.158	П	- 159	0.00	56.5			4.68
				28,4	7.43	0.130	T	-159		38,3			what
+			1	28:5	1 1		$\dashv$		0,60				i .
			1/		7.41	0.4 <u>20</u>	+	-157	0,00	A5.:			6,4,7
8	4	. 8	¥	28.5	7.40	0.131 H	$\dashv$	- <u>  [5] [5</u>	0.00	39,9	_=		لورا وا
					ļ		4						
						·	$\perp$						·
			1										
							7						
			-		İ	· · · · · ·	十						
	MDIT		7 T	ECTION	DATA	<del></del>			I Com Danisa		4. * * 14.		
									oling Personn		(C 116	4.6.7	
	-			s) & Equip					JC Prind	7			
								115/05 ,1				<del></del>	
San	upie An	atyti	cal	Parameter:	s/Methoc	ı: Rei	IZC.	ne and Napht	halene via EPA	A Method 826	MR		
_													
				7 14'	15			End Samp					
	ID REA		G(S	):			ŀ	TUIFID Moc	lel & Ionizatio	on Potential			
	VSHEE			100 - 0	_								
AMU.	YLLINIS	: <i>I</i> I/A	. ``	Mint	( -()\)'	# ( )							5

<b>E</b> 4		ENVIRONMENTAL
	26/47	
		INCORPORATED

#### GROUNDWATER SAMPLE WELL NO .: NUL - 14 R

		ICORPO!	RATED	(	COLLECT	ON RECO	)RD PE	PERMIT NO.:				
_	ect No.:			05-113		Client:		Beaze	r East			
	ect Nan			th Caval		Project Lo		uston, TX				
		ndition	s: <u>Su</u> j	NN. ( !	90°F			ling Date:	۷	oaliale	25	
1. W				easured	from top of i			•				
, a.		th to Ll			<del></del> `	,	pth to Water:			EL		
c.		th to DI				•	tal Well Dept			<u>".05</u>		
e.			ickness:	(a-b)		,	APL Thickn	ess:	(c-d)			
g.	•	9	Vater Colui		29.88	(ft) (a-d	1)				·	
h.		Volum		.87	( <u>!</u>	gal)			Co	nversion F		
		URGE I				-	,		<del></del>	(a x cf =	<del></del>	
a. L	-	ge Meth	ou: <u>انتا</u> g Equipme:		ン・PERISTORIBA	raitic t		<del></del>	Well LD		Fact. (ci	
ъ. -					(1f x 2c) (gals.	\.		- <del></del>	1	0.0 0.1		
c. d.	_		_		Vell Volumes		~ 3 :	<del></del>	1	0.6		
e.			Time: \C			rge Time:	<u>~36/</u>	1	6	1.4		
<u></u> T	Lapse	Purge	1	<del>1.~5</del>	T 2		1:15	T	<del>                                     </del>	T <del></del>	Wa	
l bass	Time	Rate	Temp (°C)	pH	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Lev	
No.	(min.)		(± 10%)	(± 0.1)	(#5/m,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft	
REP	URGE	value:										
72	55	250m/	26.5	12/85	0.117	- 200	0.45	80.0		_	17.	
44 6 7 7 4	Out this state of	THE PERSON NAMED IN COLUMN				Shirt Title					MH.	
1	1	1	26.7	12.39	0.115	-197	0.00	37.6			17.0	
			26:4	12.51	0.164	-188	0,00	11.4			18.5	
3			2le. 5	11.657	0.092	- 11pl	0.00	40,00	_		18:5	
			26.4	10,32	0.095	-146	0.00	35.A		]	18.7	
			24.10	8.93	طا10.0	-124	0 · UU	28.6		-	18	
2			215.65	.8,09	0,111	-173	\$ , C/C	10.1	•		18.	
7-			26.5	7.58	D. 113.	-118	0,00	9.4	-	]	18.9	
8		. ]	26.lo	7,72	<u> </u>	-111	0.5 <i>D</i>	11:7	[	-	18.0	
1			2 hr. 5	SEF	0.118	-114	0.00	₹.81			.'∀, c	
لن	24	2	26.4	7.71	0.113	- 111 -	0. යට	11.2			19.0	
			<u>_</u>	·								
1												
_												
			ECTION			-	ding Personn	el:	P.To	PET_		
	-		s) & Equip		In Fron	PERISTAL	TIC. PLANE					
Sam	ple I.D.	. (Name	, Date, Tim	ie): <u>w</u>	W-14R;00	9/19/05:11	45					
Sam	ple An	alytical	Parameter	s/Method	l: <u>Benze</u>	ne and Naphtl	nalene via EP/	A Method 826	0B			
C-	-1a O4	~. T.				7-10			<del></del>			
			: 11:12 -	······································		End Sampl		T)-/- //-/				
		DING(s	ij÷		1	מסגעו מדגומד.	lel & Jonizatio	on Koteminal				
OK,	/SHEEI	N;	•		•							

COMMENTS:

ENVIRONMENTAL		
3.7 (3.4 )		ENVIRONMENTAL
	$\Delta = \Delta$	-
INCORPORATED		INCORPORATED

GROUNDWATER SAMPLE WELL NO.: TWO-1-1 COLLECTION RECORD PERMIT NO.:

				\ <u></u>		CIV. P.		70	-		
	ject No.:			05-113	4 ~	Client: Project Loc		Beazer	r East		
	ect Nam	ie: nditions:		h Cavalo		_ Project Dot		uston, TX ling Date:		7(8/2) P	
					from top of in	nner well cas		mg Date:		116/0	9
a.		th to LN.	A Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Comm	)			pth to Water:	:	PO.8	•	(ft)
. C.		th to DN					tal Well Deptl		45	<u>J</u>	(ft)
e.		PL Thic	· · · · · · · · · · · · · · · · · · ·	(a-b)		•	IAPL Thickne		(c-d)		(ft)
g.		•	ater Colum		37.11	(ft) (a-d	j)				
h.		Volume		1.43	(g	gal)			Cos	nversion F	actors
		URGE D	ATA		0 0/	0		•		(a x cf = 1	
a.		ge Metho				BAILER			Well I.D.		Fact. (cf)
b.			g Equipmen		(oriba U-22	\		<del></del>	1	0.0	1
c. d.					(1f x 2c) (gals.) Vell Volumes l		1.54		2	0.1	
e.			Time: \\\			rge Time:	<i>181</i> ⊿ -1.7 &	מינותף	6	1.4	1
	Lapse	Purge	Tanio. ( ).	Ť'		1	1	1 110	<del> </del>	Γ	Water
Read	Time	Rate	Temp (°C)	pН	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)		(± 10%)	(± 0.1)	( \$\forall m,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
PRE	PURGEN	VATUUES									
	ובצירו		DISTALLIE!	Pump	unable to	Pull HEAV	th SED. M	ATUR - U	bru 45	E KAT	ER
PUR	GINGWA										
		STARRE	BAZINI	, p	730						
1	737	~	1 _ 1	757	0099	-37%	0.00	7944	0.0		
2	1741	<del></del>	295		70099	-637	0-06	7999	0.0	~	<del> </del>
	125			<del> </del>	<del></del>	-1196	O.00		1		<del> </del>
			38.5	1.27	0.15	<del> </del>	1	33-6	00	`	<del> </del>
	1744		7.86	7.18	0.12	-1300	0.00	7446	00		ļ
5	1754		39-10	7.10	0.14	-1100	0.00	७५५४	0.0		ļ
. 1	गज्य		<del>  ``</del>	1001	D.14	~981	0.00	7999	0.0	-	
٦	1803		767	6.48	61.0	-1347	0.00	401	0.0	·	
প্ত	1809	-	29.4	6.80	012	-1181	0.00	SW	0.0	ſ	
c/	1817	- :	789	15.0	0-40	-1077	5-00	754	00	,	DEX
		Day	<del></del>	~ 1.5g			DECOURT O				
	,	- T		1 3	1 1 100,000		W. Cooper	3 1 30 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
	0770		34.0	7.17	8.17	-1000	F	450	0.0		17-10
	2 . (1-4-		576.00		U-11	-1000	0.00	1.3-	0.0		11-10
	· · · · · · · · ·					لـــــــــــــــــــــــــــــــــــــ					
			LECTION		1	13.7	ipling Personii	ici:	$\mathcal{BB}_{-}$		
		•	(s) & Equip:		1, Bosento						
			e, Date, Tim	· —		4/18/05/ E				<del></del>	
Sa	mple An	alytical	Parameters	s/Methor	d: Benze	ene and Naphi	thalene via EP.	A Method 82	.60B		
_		_						<del></del>			
		art Time			<del></del>	End Samp		179 <u>5</u>			
		ADING(s	s):		•	PID/FID Mo	odel & Ionizati	ion Potential			
	R/SHEE		$D = \frac{1}{2}$	••	6	١ ١					!
$M \cap M$	IMENTS	2.	7766	17 .00	muse and 1	14.CSP .					

.g 44 pt		
	ENVIRO	NMENTAL
<b>7</b>	 NCORPO	RATED

### **GROUNDWATER SAMPLE**

WELL NO.:

1-6-00T COLLECTION RECORD PERMIT NO .: 05-113 Project No .: Client: Beazer East South Cavalcade Project Location: Project Name: Houston, TX Weather Conditions: 1407 900 Sampling Date: 1. WATER LEVEL DATA (measured from top of inner well casing) a. Depth to LNAPL: (ft) b. Depth to Water:  $\neg J L I$ (ft) Depth to DNAPL: (ft) d. Total Well Depth: 43.5 (ft) (a-b) **DNAPL** Thickness: LNAPL Thickness: (ft) f. (c-d) (ft) Length of Water Column: (ft) (a-d) (gal) Well Volume: Conversion Factors 2. WELL PURGE DATA  $(a \times cf = h)$ BAZLUR BLYDDER DUMP Purge Method: Well I.D. Conv. Fact. (cf) Field Testing Equipment: Horiba U-22 b. 0.041 Required Total Purge Volume (1f x 2c) (gals.): 0.163 c. 2 Total Volume and Number of Well Volumes Removed: ~1.5 0.653 Begin Purge Time: ハンン End Purge Time: 1310 1.470 Purge Water Lapse Read Time Rate Temp (°C) Spec. Cond. Eh/ORP Diss O2 TURB Salinity TDS Level No. (min.) (± 10%)  $(\pm 0.1)$ (%E±, my?) (mV,±10mV) (mg/L,±10%) (NTU,±10%) G/L (ft) PREPERGENATIONS SHOLED 5 soll BEFORE D PERGING VALUES 1996 13.11 SHO! 1248 りんをひぶつに LANE > WITHER DEGME 1955 ७ ५५ ५ -58.9 120 19.24 しつゴ 0.16 018 37.11 لهرود ال 01.0 7 ५५५ 1300 -57-1 0.0 O. 31 0-16 0.33 > ५५५ 36011 305 PG.1 -57-0 04 Ч フロロー 0-1 01दी فحرير 0-150 -59-0.36 אַתנכן RECHARL  $\mathcal{O}\mathscr{D}\mathcal{A}$ Mit. 18,50 ENGLICK WITHER sugmes or 30.11 77.9 7994 0.1 0.14 1.15-D. 17 7.30 3. SAMPLE COLLECTION DATA  $\mathcal{G}$ Sampling Personnel: BUNDORE DUMP Sampling Method(s) & Equip: Sample I.D. (Name, Date, Time): Two-2-1/9/17/05/ 1830 Sample Analytical Parameters/Method: Benzene and Naphthalene via EPA Method 8260B Sample Start Time: End SampleTime: PID/FID READING(s): PID/FID Model & Ionization Potential ODOR/SHEEN: REACUSON W/ HUL CHISTRY EXCESSIVE BURBLES

COMMENTS:

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### GROUNDWATER SAMPLE WELL NO .: TWO-3-1

		DDA - O.			COLLECTI	ON RECU	)KD PE	RMIT NO.:			
	ject No.:			5-113		Client:	. 4	Beaze	r East		
<b>8</b>	ject Nan			h Caval		Project Lo		uston, TX			
		nditions			150			ling Date:	<u>e</u>	M	
				easured	from top of i				M .	. •	48.5
•	. *.	th to LN			<del></del> `		pth to Water:		16.01		(ft)
C.		th to DN APL Thi		(a-b)			tal Well Deptl APL Thickne			31 500	
e.	- ·	`	ater Colun		32.5	(ft) (a-		38.	(c-d)		(ft)
g. h.		l Volume		1:33		(12) (2=- gal)	)		Con	nversion Fa	actors
	VELL P	URGE I	DATA				,		00.	(axcf=h	i
a.	Purg	e Meth	od: Depage	504CTHC	PUMP/BLA	ODER Primp	BARUER		Well I.D.		Fact. (cf)
Ъ.	Field	d Testing	g Equipmen	it: H	oriba U-22	7			1	0.04	
c.	Regi	uired To	tal Purge V	olume (	1f x 2c) (gals.	):			2	0.10	53
d.	Tota	l Volum	e and Num	ber of V	Vell Volumes	Removed:	Goal	<del></del>	4	0.65	53
e.		T	Time: T31	<u> </u>	End Pu	irge Time:	1745	9/15/55	6	1.47	<del>,</del>
Dand	Lapse Time	Purge Rate	Temp (°C)	_353	Spec. Cond.	Eh/ORP	Diss O2	TUTO	Cattantes	TDC	Water Level
Read No.	(min.)	Rate	(± 10%)	pH (± 0.1)	(\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	(mV,±10mV)	(mg/L,±10%)	TURB (NTU,±10%)	Salinity %	TDS G/L	(ft)
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			s) & Equip		ELISTACTIC						
			e, Date, Tin	· —	<u> </u>	<del>- y y y y y</del>	P. 1645				
Sa	mple Ar	ıalytical	Parameter	s/Metho	d: Benz	ene and Náph	thalene via EP	A Method 82	60B		
			1, , , , ,					·- <u></u>			
		art Time					oleTime: 165		· · · · · ·	, <u>.</u>	
		ADING(	s):			PID/FID Mo	del & Jonizat	ion Potential			
	R/SHEE										I
COM	MENTS	z: KEAC	STICK V	vr Hic	il Caus	STACK EXC	LETATILLE BY	BOUTS			1

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	ect No.:			05-113	······································	_Client: _		Be	azer Ea		
	ect Nan			ith Calva		Project I				ton, TX	
200 - 200		nditions	المتعانفين	JN14 -	らら。ド ed from top c			ipling Da	د <u>ن</u>	9/15	05
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∷ a.	•	th to LN			······································	•	Depth to Wa		19.10		(ft)
· c.	-	th to DN PL This		(a-b)	<del></del> `	•	Total Well I NAPL Thi	•	56.3 (c-d)	<u>.+</u>	(ft)
e.				. ,	34.64	,	a-d)	ckness.	(c-a)		(ft)
g. h.		gin or w				gal)	a-u <i>j</i>		Con	version F	7
		URGE D		1.5	, , , , ,	541)			1	(axcf=b	
۷۰ ، a.		ge Metho		120 20 1-	LONG PER		Q.	) 	Well I.D.		Fact. (cf)
ь. b.	_	,			torisa i		<u></u>	CHAN CEU		0.0	
c.					e (1f x 2c) (gr				2	0.1	
d.					f Well Volum		d: 21 h	izel	4	0.6	
е.		n Purge					<u> (۱۵: ما ۱</u>	<del>-() -</del> -	6	1.47	
	Lapse	Purge	Temp	pН	Spec. Cond.	Eh/ORP	Diss O2	TURB			Water
Read	Time	Rate	(deg. C)	(s.u.)	(ms/¢m)	(mV)	(mg/L)	(NTU)	Salinity	TDS	Level
No.	(min.)	rent to see the contract of the	(±10%)	(±0.1)	(±3%)	(±10mV)	(±10%)	(±10%)	%	G/L	(ft)
RE:	PURCE	VALUES				<b>为为于创建</b>	No.		遊戲		
10-	5	330m/ mir	29.1.	9.41	92.1	-570	4.70	999			23.10
URC	ING V	LUES	連動	48.6	A SOFT	<b>建筑</b>					
1	1	1	30.0	9.39	93.1	-562	1,09	499			24.62
2			3; 9	9.34	94.3	-461	0.49	999		_	25.41
3	_		32.3	9,37	94.1	-364		999			38
4			32.0	4.34	94.0	-782	0,97	900		~	27, 20
5	_		32.4	9.31	· ·	- 2i8	0.76	999		·	27.95
,	2//	7	32. le	4.31	94.0			999			28.00
	<u> </u>					-179	0.64	1			28.00
			112 M	,	PILRUE	IN-TH	12 15 72 L			<u>gun</u>	
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	1730		33.1	4-28	91-0	- 3-11	13.54	७५५५			
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1	11:30	33.1	4.38	93-0	3-11	12 - 2 M	7099	<u> </u>			
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3. §	SAMPLE	COLLECTI	ON DAT	ГА	S	ımpling Pe	rsonnel:	R.	TIME	Τ	
S	ampling M	ethod(s) & Ec	լսip: <u>Ն</u>	ow Fler	i FR	5.77\6x1 -771	Rus	9/50	ALLEX	<u>ر</u>	
S	ample I.D.	(Name, Date,	Time):-	<u> ル-3- こ</u>	04/15/	05.17	S ت				 
S	ample Ana	lytical Param	cters/Me	thod: Ben	1727-JUE "	MADTHOO	IENE.	UM E	502 KN	F-1-1000 8	ZULB
					·						
S	ample Star	t Time: \-4.	NO		End Sa	mpleTime:					
	FID REAL				PID/FID Model & Ionization Potential						
ODO	OR/SHEEN	€;									
cor	MMENTS:	AT I Chief	157 CE	ECHAROR	- Dane	(T) 90	F344.4.	17- Lue	<u> </u>		

# GROUNDWATER SAMPLE WELL NO .: Tw-q-1

1	- ' '	CORPOR	AJED	N	COLLECTI	ON RECO	RD PE	RMIT NO.:			
Proj	ject No.:			5-113		Client:			r East		
	ject Nan			h Cavalo		Project Loc		uston, TX			
	ther Co			<u>जर क्षेत्र</u>				ing Date:	4	118/05	
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. а.	. Дер			<del></del>	_ <del>-</del> `	-	oth to Water:		OF.81		(ft)
. с.		th to DN				•	al Well Deptl		55.	<u>51</u>	(ft)
e.		PL Thi		(a-b)		•	APL Thickne	ess:	(c-d)		(ft)
g.	•	~	ater Colun		<u> 36.4                                     </u>	(ft) (a-d	1)		<del></del>		
h.		Volume		1.4-	(g	(al)			Con	nversion F	
	VELL P			Λ.	_					(axcf=	<del></del>
a.	_	ge Metho		BAZLE					Well I.D.		Fact. (cf)
b.			g Equipmen		oriba U-22				1	0.0	i
C.					[1f x 2c) (gals.] Vell Volumes [				2	0.1	
d.			Time: 🔘				4.5 god		4	0,6	i
e.	Lapse	Purge	Time: O	T SO	Endra	inge inne.	(5'0). T	1	6	1.4	Water
Read	Time	Rate	Temp (°C)	pН	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)		(± 10%)	(± 0.1)	(%r ,±3%)		(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
PRE	RURGE	VALUES							790		
	105				WALL BAT		3 20 3	- n 01 - 1631			
	GINGY								PARTE DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA COMPANION DE LA CO	i Taribi	
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			s) & Equip		RUSTALTIC		binig i ci aom	ici.			
			s, & Eguip e, Date, Tin			7,	Selection 177			<del></del>	
					<del>-</del>		1840	4 3 4 1 1 1 2 2	COD		
Sa	mpie Ar	iaiytical	Parameter	s/ivietho	a: Benze	ene and Naphi	halene via EP	A Method 82	100R		
		. —	10								
			: 1840				leTime: 195				
	FID REA		s):			PID/FID Mo	del & Ionizat	ion Potential			
odo	R/SHEE	EN:									
COM	MENTS	S:									

	ENVIRONMENTAL
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	INCORPORATED
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#### GROUNDWATER SAMPLE WELL NO .: TW-4-2 COLLECTION RECORD

	· · · · · · · · · · · · · · · · · · ·	CORPOR	'ATED		COLLECTION	ON RECO	RD PE	ERMIT NO.:			
	ject No.:		···	05-113		Client:		Beazer	r East		
	ject Nam	'		th Cavalo		Project Loc		uston, TX			
	ather Co				805			ling Date:	<u> 4</u>	1/19/05	<u></u>
<b>4</b>			-		from top of in						
a.		th to LN					pth to Water:	<u>.                                    </u>	14.4 55.		(ft)
С.		th to DN		<u>-</u>			tal Well Depth	h:		<u> </u>	(ft)
e.		APL This	ickness: Vater Colum	(a-b)		•	IAPL Thickne	28S:	(c-d)		(ft)
g. h.		gta of W I Volume			<u> <del>4</del>1. 3                                   </u>	(ft) (a-d	1)			ing E	· · · ]
	. WELL PU				<u> </u>	,41)				nversion Fa (a x cf = h	
2. Yı		ge Metho		VALLE P.	<u>.</u>				Well I.D.		h) Fact. (cf)
ъ. b.	_		g Equipmen	**	loriba U-22	···· ·· ·· ·· ·· · · · · · · · · · · ·		<del></del>	1	0.04	
c.		_			(1f x 2c) (gals.)	);			2	0.16	
d.	_		_		Vell Volumes I		· à gal	<del></del>	4	0.65	
e.			Time: 📆			arge Time:	0900		6	1.47	
Γ.	Lapse	Purge							1		Water
Read No.	Time (min.)	Rate	Temp (°C) (± 10%)	pH (± 0.1)	Spec. Cond. (5/1/1/1,±3%)	Eh/ORP (mV,±10mV)	Diss O2 (mg/L,±10%)	TURB (NTU,±10%)	Salinity %	TDS G/L	Level
mak No Contra	204-1-7-24-1-7-1-4-2-4-2-4-2-4-4-2-4-4-4-4-4-4-4-4-4-4		ALAS NO ACTIONS SPECIAL DESCRIPTION OF THE	(= 0.1)		(III.A.T.I.III)	(mgr,-1070)	(NIU, ZIU /0)	70 **ENSTRUKE		(ft)
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3. SA	AMPLI	COLI	LECTION	DATA		Sam	pling Personn	nel:	BB	1	
			(s) & Equip		ESTISTALTAC			10.,			
			e, Date, Tim			(9/19/05/	6 0730				
			Parameters					A Method 820	SOR		
<b>~</b>	mpio	.417	I ai amou.	3/17AULALU.	7	Me and Trapin	Halelle via Di	A Michiga 02.	000		
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			s);		j	LID/LID 1410	del & lonizati	ion l'otemuai			
	R/SHEE		n		SAMPLE W	M. Ca					ļ
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# ENVIRONMENTAL

### GROUNDWATER SAMPLE WELL NO.: 7W-5-1

		VCORPOI	RATED	_	COLLECTI	ON RECO	RD PE	RMIT NO.:			
Pro	ject No.	:		05-113		Client:	· · .	Beaze	r East		
	ject Nan			th Caval		Project Loc		uston, TX			
Wea	ather Co	ndition	s: <u>Silks</u>	i runi	150 F		Samp	ling Date:	0	0, 1.4.	,5
1. X	WATER	LEVE	L DATA (m	easured	from top of in	nner well cas	ing)				
a			VAPL:		(1	ft) b. De _l	oth to Water:	_	9.64		(ft)
Ć.	. Dep	th to Dl	NAPL:			ft) d. Tot	al Well Dept	h:	18.0		(ft)
e.	. LN	APL Th	ickness:	(a-b)	(1	ft) f. DN	APL Thickne	ess:	(c-d)		(ft)
g.	. Len	gth of V	Vater Colu	nn:	8.37	(ft) (a-c	I)				
h.		Volum	e:	0.34	- (g	gal)			Cor	oversion Fa	actors
2. V	VELL P	URGE 1	DATA							$(a \times cf = 1)$	a)
a.	a. Purge Method: Low Flow: PERICTALAR FLOWO Well I.										Fact (cf)
b.	. Field	l Testin	g Equipme	nt: H	oriba U-22			<del></del>	.D	0.04	41
c.	Req	uired To	tal Purge	Volume (	1f x 2c) (gals.	): —			2	0.16	53
d.					Vell Volumes		2 2 GA	<del></del>	4	0.65	53
e.	Begi	n Purge	Time: 12	:25	End Pu	rge Time: 🗤			6	1.47	70
	Lapse	Purge									Water
Read	1	Rate	Temp (°C)	! -	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)	and the Angel Barrie	(± 10%)	(± 0.1)	(^5/,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
PRE	RURGE		类的概念								
INT	5	350 my	243	8.42	42.5	- 83	4,28	999			12,51
THE PARTY	GING VA		「おきマナミジュタジンジのようだ								LEW SECTION
ren'i/		11211152	1	305504 SAN WAR		Service March 185		PERSONAL PROPERTY.			
	<del></del>	<del> \</del>	25.2	10.37	57.1	- 345	0.42	999			12.53
2	<u> </u>		25.4	10.20	55.3	- 355	0,00	900			12.38
3	1	V	25.2	10.00	54.4	- 307.	0.00	0,0,0			12.31
				10100			0.00	· ` ` ` \			
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				}	ł						Ī
-		··			<u></u>						
3. SA	AMPLE	COLL	ECTION	DATA		Samp	ling Personn	el:	R. TIP	⊕EJ	
Sar	mpling N	riethod(	s) & Equip	: 10	الايمياع در	-	_				
			, Date, Tin		5-1:09/14						
	-	•	Parameter:				nalene via EPA	Mathod 226	SOB		
UAL	mpic Etti	mycical	i ai ainetel	ov Tracellity C	. Denze	ne and Maphu	iatene via EPA	1 1/10/11/04 620	עטי		
~											
			: 12:40			End Sampl					
	ID REA		s):		I	PID/FID Mod	lel & Ionizatio	on Poten tial			Ì
	R/SHEE										J
COM	MENTS	CITC:	MENERA	アロア	Etan Jose	OF CASU	1616 - STIC	K 18 2.	, L.,		1

ENVIRONMENTAL

#### GROUNDWATER SAMPLE WELL NO .: TW- 6-2

R		YCORPO!	RATED	(	COLLECTI	ON RECO	RD PE	RMIT NO.:			
Pro	ject No.	:	(	05-113		Client:	•	Beaze	r East`		
Pro	ject Nar	ne:		th Caval		Project Loc	cation: Ho	uston, TX			
	ather Co			14 ' 10				ling Date:	ξ.	9/18/0	5
		•		easured	from top of in						
a		th to LI		·			oth to Water:		3,0	e8	(ft
C		th to Di					al Well Dept		<u>: جا آ</u>	79	(ft
е.			ickness:	(a-b)		•	APL Thickne	288:	(c-d)		(ft)
g	1.75.15.1	_	Vater Colur		13.11	(ft) (a-c	1)				
h		l Volum		ט	<u>63                                    </u>	gal)		•	Con	nversion F	j
2. V	VELL P					0			Well I.D.	$(a \times cf = 1)$	<del></del>
Ĭ	a. Purge Method: <u>Lian Flam Peristrum Pinati</u> b. Field Testing Equipment: Horiba U-22										Fact (cf)
b.	-				oriba U-22 1f x 2c) (gals.)	١.		<del></del>	0	0.0	
c.					Vell Volumes				2	0.10	
d.	-		Time: (=4 :			rge Time: 💉	<u> </u>	<u>a-</u>	6	0.65 1.47	
e.	Lapse	Purge	Line. ( T	100	End 7 d	lige Time.	7.55	· · · · · · · · · · · · · · · · · · ·		1.4	Water
Read	Time	Rate	Temp (°C)	Hq	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
Ņο.	(min.)	}	(± 10%)	(± 0.1)	(**5/ _~ ,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
RRE	EURGE	VALUE									
14.	5	MA	30.2	8.3A	iole.9	52	١٠٤٠ ا	१०५		_	۶۲.ب
5022 37	Frank Line Andrews	GOLLENDANIA.								Zara:	
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1	<del> </del>	<del> </del> -	30.5	8.22	66.7	31	0.00	999	<u> </u>		7.73
2	<b>  -</b>	}-}-	30:7	8.03	ie3 9	9	0.00	999	-		543_
3	<b></b>		304	7.93	(0A.0	-21	0.00	999			7.37
4			30.5	796	(A.O	-28	0.00	वदव	-		7.34
5	<u> </u>	4	30.0	7.92	64.0	<u>3</u> ≎	0.00	04.02 <u>.02</u>			7.37
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		•	s) & Equip		in Flanci	1 ,		©			
	-		, Date, Tim			105 CZ		<u>.</u>			
Sai	mple An	alytical	Parameters	s/Method	I: Benze	ne and Naphti	nalene via EPA	A Method 826	0B		
Sar	niple Sta	rt Time	: 17:5	5		End Sampl	eTime:				
PID/F	D REA	DING(s	s):		I	PID/FID Mod	lel & Ionizati	on Potential			
COCC	R/SHEE	N:	,				•				
רחות	MENTS	: 145	1405571	TAV-X I	<b>`</b> .						9

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GROUNDWATER SAMPLE WELL NO.:

19		icoroo	RAIED	والمستران الخنش	COLLECT	ION RECO	)RD PE	ERMIT NO.:			
Pro	ect No.:	: <u></u> -		05-113		Client:			er East		
G .	ect Nan			th Caval		Project Lo		ouston, TX			
	ther Co				s -Sunyu			oling Date:	<u>- 4</u>	V 8/02	. <u> </u>
1. V				icasured	from top of i					, .	
a.		th to LI					pth to Water		17.a.		(f
c.		th to DI		( ) )	<del></del>		tal Well Dept		<u>82</u>	2	(f
e.	_ · .		ickness:	(a-b)		•	APL Thickn	ess:	(c-q)		(fi
g.			Vater Colur		40.7	(ft) (a-c	1)				
h.	Wel ELL P	l Volum		€0.1	(	gal)			Co:	nversion F	
			oge D	·~~	The Pirmp	/B 171 100			777 11 7 75	(a x cf = )	<del></del>
2. 1.	•	ge Meth	g Equipme		ioriba U-22	1 TANEE		<del></del>	Well L.D.		Fact. (cf)
b.				_	(1f x 2c) (gals.	١.		<del></del>	1 2	0.0	
c. d.	-		-		Vell Volumes	·	~ 1-8c	.1	4	0.10	
e.	, .		Time: 14			rge Time:	1232	<u> </u>	6	1.47	
	Lapse	Purge	Time. 11	I	J. J. J. J. J. J. J. J. J. J. J. J. J. J	inge Time.	1 230	Ţ	-	1.7	Water
Read	Time	Rate	Temp (°C)		Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)		(± 10%)	(± 0.1)	(m ½, ,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
RE	BURGE	VALUE.								建模型	和影響
			1	MALE	י מוזיבר שפוני.	ישבני עב	E PERTATE	Line Dian	D ÷ []	277.5	
Y D	ING X	THE S									
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	$\mathcal{C}123$	1	Wire A	ricus V	VELL TO RE	FOUR BY	FORE Str	שמעט		ſ	
-	6172	<b>5</b>	94.1	4.63	64.0	- 300	0.31	7984	0.0		31-17
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. SA	MPLE	COLL	ECTION	DATA	,	Samp	oling Personn	iel:	_BD		
San	npling N	Icthod(	s) & Equip	: <u></u>	إوساعة مهورس	t) amp					
San	nple I.D	. (Name	, Date, Tim	ie):	W-64/1	4/14/05/ Q	- \73 <i>0</i>				
San	nple An	alytical	Parameters	Method	l: Benze	ne and Napht		A Method 82	60B		
	•	•									
San	iple Sta	rt Time	: 1730			End Samp	leTime: 17	<del></del>			
	D REA		<del></del>		•	PID/FID Mod					
	SHEE		· · ·		•	11106	XUIIIZAU	J.1 1, U. CALLIZI			
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	ENVIRONMENTAL INCORPORATED

## GROUNDWATER SAMPLE WELL NO.: TW-7-1

				بالتراج	JULLEUI.		IKD PE	KIMIT MO::			
	ject No.			05-113	<u> </u>	_Client:	<u> </u>	Beaze	r East		
	ject Nan			th Caval		Project Lo		uston, TX			
	ather Co				90°5			ling Date:	_(	1/15/0	5
				ieasured	from top of i	٠,			<b></b>		
а.		th to LI					pth to Water:		· 8-		(fi
c.		th to Di				•	tal Well Dept			.3"	(ft
e.		APL Thi	•	(a-b)		•	IAPL Thickn	ess:	(c-d)		(ft
g.	,,		Vater Colur		30	(ft) (a-	1)				
h.	VELL P	l Volum			( <u> </u>	gal)			Cor	version F	
		ge Meth		THER						(axcf=	·
я. b.	-	_	g Equipmen		oriba U-22			<del></del>	Well I.D.		Fact. (cf)
		_		_		\.		<del></del>	1 2	0.0 0.1	
c. d.		equired Total Purge Volume (1f x 2c) (gals.):  otal Volume and Number of Well Volumes Removed:								0.6	-
e.			Time:				1355	<del></del>	6	1.4	ŀ
<u>.</u>	Lapse	Purge	Time.	T	1	I go I mic.	1 222	<u> </u>		1.7	Water
ad	Time	Rate	Temp (°C)	Hq	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
0.	(min.)	<u> </u>	(± 10%)	(± 0.1)	(5/n,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
E	PURCE.	VALUE									
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san	npie An	atytical l	Parameters	s/Method	i: Benze	ne and Napht	halene via EPA	A Method 826	OB		
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		[77,817 Text						Client:						
		t Nar				th Caval		_Project Lo		uston, TX		· .		
		er Co			: Sur	11-21	85°F			ling Date:	Ω'	9/15/0	5	
					DATA (m	easured	from top of i							
a.	•				IAPL:				oth to Water		5.64	•	(ft	
c.					IAPL:				al Well Dept		48.0	25	(ft	
е.					clmess:	(a-b)		•	APL Thickn	ess:	(c-d)		(ft	
g.	,		· , ·		'ater Colur		32.41	(ft) (a-c	i)					
h.		Wel				1.3	3(9	gaI)			Cor	nversion F	actors	
2. W	VE.				ATA							(a x cf = )	h)	
а.		Pur	_		-4:		ow: PERLS	JITILI ATT	Runa		Well LD.	Conv.	Fact. (cf)	
b.				•	g Equipme:		oriba U-22		•	<del></del> .		0.0	41	
c.		_			_		1f x 2c) (gals.			<u> </u>	2	0.1	63	
d.							Vell Volumes :		≈ 4 Gp	16-	4	0.6	53	
و.			_		Time: 10:	<u>55</u>	End Pu	rge Time: 1	110		6	1.4	·, ··-1	
Read		Lapse Time	1	rge ate	Temp (°C)	pH	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level	
No.		min.)	K	ale	(± 10%)	(± 0.1)	( ,±3%)	(mV,±10mV)	(mg/L,±10%)	E .	Saimty	G/L	(ft)	
						1								
BRES	1	KOL	DO.	~\\ -\\		T				<b>三</b>	NAME OF TAXABLE PARTY.			
TUL	- 30 444 7 5	5	Ca Marina	min	24.5	9.44	90.8	- 572	3.04	999			16,76	
BURG	110	(CIV)	n ii	S										
,		1	,		26.4	9.37	90.2	-584	0.21	999			17.16	
2_				\		9.17	91.2	-548		999				
	_	17			24.0				0.00				17.22	
3		<b>V</b>		4	26.0	8,99	92.0	-487	0.00	999	-		17.41	
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3. SA	<u>LM</u>	PLE	CO	LL	ECTION	DATA		Samp	ling Personn	el:	RTI	シャビイ		
Sar	mp	ling N	/leth	od(s	s) & Equip	: اسن	w Flow	PERIST	a) T) (R	E121				
	_	-			Date, Tim		)- 8-1 " OG			251-11			-	
	Sample Analytical Parameters/Method: Benzene and Naphthalene via EPA Method 8260B													
Dai	up.	ic ran	an ji ta	CAL	a and aniceca	0/1/10/11/00	DOILE	ne and Ivapin	iaiche via El J	1 Memor 620	1010			
C.		- O+	no	·			<u> </u>	Tr-20	ייייייייייייייייייייייייייייייייייייייי					
					11:10			End Sampl		70				
PID/F				ı Ç-(S	):		1	TOWN (THANCE)	lel & Ionizati	on Potential				
DDOE														
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			MENTAL		ROUNDWA	•		ELL NO.: 7	N - M -	(	
		CORPOR			COLLECTI	ON RECO	RD PE	RMIT NO.:			
A	ect No.			05-113	*	_ Client:			r East		
и -	ect Nar			th Caval		_Project Loc		uston, TX			
		nditions	s: Sur	4114	95°F			ling Date:	2_	19/14/	<u>೧೮</u>
6					from top of in					·	
3.			NAPL:				oth to Water:		7.59		(ft)
C.		th to DN			<del></del> ·		al Well Depti		23.10	<del>\$</del>	(ft)
. е.		VPL Thi		(a-b)		•	APL Thickne	ess:	(c-d)		(ft)
g.		gui oi w I Volum	'ater Colun		15.55	(ft) (a-d gal)	1)			<del></del>	<del></del> 1
h.		URGE I		0.64	(S	;a()			Con	nversion Fa	- 1
2. Y		ge Meth		n 1 14	W: PERLS		D		Well I.D.	(a x cf = l	Fact. (cf)
b.		-	g Equipmen		oriba U-22	5/4/27/7	1000	<del></del>	(1)	0.04	
о. с.											
d. Total Volume and Number of Well Volumes Removed: $\approx 2.5$ Gen. 4 0.653											
e.			Time: 16			irge Time: 🕔	6:35	<u> </u>	6	1.47	
	Lapse	Purge				1					Water
Rend	Time	Rate	Temp (°C)	рĦ	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)	K. 24-2477-1419	(± 10%)	(± 0.1)	(w/o ,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
RRE	PURGE	VALUE									
INT	5_	400 cri	29.3	10.99	0.097	-33\	4.69	999		-	8,69
PURC	INGV	UCUES:							如理验	<b>建物域</b>	
,	1	1	29.4	10.26	20105	-305	1,35	999			11.71
2	1		28.7	10.62	0.100	-29Le	0.40	999			12.50
3	1/	1/	28.6	9.13	0.100	-17-8		9957			13.04
· -			<u>کا تا تا</u>	11.12	0,100	-\+0	0.09				15,04
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		J									i
3. SA	MPLE	COLL	ECTION	DATA		Samp	ling Personn	el:	RTIE	शिक्त	
San	npling N	Acthod(s	s) & Equip:	: \ \ E	المحرة لمح						
	Sampling Method(s) & Equip: Low First PERISTALTIC FLANT  Sample I.D. (Name, Date, Time): The agree of the 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th The 13th										
			Parameters	-			nalene via EPA	Method 826	50B		
	*	•									
San	aple Sta	rt Time:	16:35		<del></del>	End Sampl	eTime:				
		DING(s			I		icl & Ionizatio	on Poteritial			
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COMMENTS:

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### GROUNDWATER SAMPLE WELL NO.: TW - 9 - 2

	INCORP	ORATED	(	COLLECTI	ON RECO	RD PE	RMIT NO.:				
Project			05-113		Client:		Beaze	r East			
Project l	Name:		th Caval		Project Lo	cation: Ho	uston, TX				
	Conditio	ns: <u>San</u>	NY : 0	15°F			ling Date:	Ω	9/14/1	25.	
	Salar and	EL DATA (11	neasured	from top of i					,		6
	Depth to I		<u> </u>			pth to Water:		3.43	<u>,</u>	(ft)	)
	Depth to I				•	tal Well Dept		17.4	1	(ft)	)
	LNAPL T		(a-b)	(1	•	APL Thickne	:225	(c-d)		(ft)	)
_	–	Water Colu	mn:	8.98	(ft) (a-c	i)					
	Well Volu		0,37	(و	gal)			Cor	nversion F	actors	
. WEL	L PURGE	DATA							(axcf=	h)	
a. I	Purge Met	:hod: <u>تان</u>	N FLO	W. PERIST	ALTIC	Puno		Well I.D.	. Conv.	Fact. (cf)	
		ng Equipme		ioriba U-22					0.0	41	
				(1f x 2c) (gals.)			<del></del>	2	0.1	63	1
d. I	otal Volu	me and Nun	aber of V	Vell Volumes	Removed:	≈1 GAL		4	0.6	53	
e. I	Begin Pur	ge Time:   7	15	End Pu	rge Time: \	7120		6	1.4	70	_i
1 1	pse Purg									Water	
	me Rate	t Temp (°C)	pH (± 0.1)	Spec. Cond.	Eh/ORP (mV,±10mV)	Diss O2	TURB (NTU,±10%)	Salinity	TDS G/L	Level	į
	in.)		(- U.1)	(\sqrt{m},±3%)	(mv,riomv)	(mg/L,±10%)	(IVIU,EIU76)	% #4x****	MARKET CALL	(ft)	-
REPUR	GBVALU 3.Cm										2
77	5 %	28.4	7.96	0417	-26	8.10	949			14.02	
p\$1950 25112条约	ALOUES							fold were a			Ž
1	, 480, F 19 343, 545, 54	30.1	7.44	6 13 1	39	5.52	999			14,57	٦
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	09-15	-	) :		•			Ì	,	10.69-	, Ì
		27.8	9.96	0.159	-71		287			16.01	1
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		LECTION				oling Personn		RTIT	<u>735,</u>		
Samplii	ng Method	l(s) & Equip	: <u>L</u> =	w Flow:	PERISTYLE	TIC PLUMP	·				į
Sample	I.D. (Nan	ie, Date, Tin	10): Th	1-9-2,09	15/051						
Sample	Analytica	l Parameter	s/Method			nalene via EPA	A Method 826	0B	- <u>-</u>		1
*				<u></u>							ĺ
Sample	Start Tim				End Camel	aTime:					
	EADING				End Sampl	iel & Ionizatio	n Dotontial	<del></del> .		[	
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1	\$ \$ J. M. K.	
	ENV.	RONMENTAL
	- INCO	RPORATED

# GROUNDWATER SAMPLE WELL NO.: TW-10-1 COLLECTION RECORD PERMIT NO.

		CORPUR	AI EU		COLLECTI	ON RECO	RD PE	RMIT NO.:			
Proj	ect No::	:		5-113		_Client:		Beazer	East		
	ect Nan			h Caval		Project Loc		ıston, TX	•		
		nditions	: <u> </u>	NIAM SE	(30 E			ing Date:	<u> </u>	11705	
				easured	from top of i			· · · · · · · · · · · · · · · · · · ·	\ i	//	
		th to LN		<u> </u>		-	oth to Water: al Well Depti		<u>عاداً، طا</u>		(ft)
	೨೪.೯೪	th to DN		(a-b)			ar wen bepti APL Thickne		38.89 (c-d)	<u> </u>	(ft)
e. g.			ater Colun	• •	J-7-18	(ft) (a-d		.00.	(c-a)		(11)
h.		Volume		0.91	(5	gal)	,		Cor	version F	actors
		ÜRGE E	DATA			,			ŀ	(a x cf = 1	1
a.	Pur	ge Metho	od: <u>Lov</u>	· Fyou	1 - PERZISTA	CTIE PUMP/	BiLLODIE PUL	m.P	Well I.D.	Conv.	Fact. (cf)
b.		-	g Equipmer	nt: H	oriba U-22				1	0.0	41
c.					1f x 2c) (gals.				2	0.10	
d.		•	4 *		Vell Volumes		~ 3 GC	<u>1</u>	4	0.6	1
e.	Begi Lapse	n Purge	Time: \\	<del>کن</del> ا	Ena Pi	irge Time:		T	6	1.4	70 Water
Read	Time	Rate	Temp (°C)	pН	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No.	(min.)		(± 10%)	(± 0.1)	(γ _~ ,±3%)	(mV,±10mV)	(mg/L,±10%)	(NTU,±10%)	%	G/L	(ft)
RE	PURGE			36.37.0							
i. Indre	Έ,	with the	30.6	93	0.130	-179	3.73	7999		~	אר. דג
	TNEV	EUES			4401245	47475					
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#### GROUNDWATER SAMPLE WELL NO.: TW - 10 - 2 COLLECTION DECODD

		CORPOR	RATED	(	COLLECTI	ON RECO	RD PE	RMIT NO.:				
Pró	ect No.	:	)	05-113	كالتنسخ بالمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والمراجع والم	Client:		Beaze	r East	· · · · · · · · · · · · · · · · · · ·		
	ect Nan		Sout	h Caval	cade	Project Loc	cation: Ho	uston, TX			<del></del>	
		ndition	s: <u>Sun</u>	NY	95° F			ling Date:	04	9/14/2	5	
			DATA (m	.easured	from top of it	nner well cas	ing)		_	-+ - 10		
a.	Dep	th to LN	NAPL:		(1	ft) b. Dep	oth to Water:	<u></u> _	5.35	-	(ft)	
, °с.	Dep	th to DI	VAPL:				al Well Dept		15.8	w	(ft)	
е.			ickness:	(a-b)	`	•	APL Thickne	ess:	(c-d)		(ft)	
g.	interchance in		Vater Colur	nn:	10.51	(ft) (a-c	I)					
, h.		l Volum		0.43	(g	gal)			Cor	nversion F	actors	
2. V		URGE I			:					(a x cf = h)		
a.	_	ge Meth			ion PER	LISTA CTI	PIND -	•	Well LD.	Conv.	Fact. (cf)	
b.			g Equipme		oriba U-22			· ·		0.0	4]	
c.	c. Required Total Purge Volume (1f x 2c) (gals.):										63	
d.	d. Total Volume and Number of Well Volumes Removed: ミスをAL									0.6	53	
е.			Time: 14	45	End-Pu	rge Time: 19	3:00		6	1.47		
,	Lapse	Purge	T (9C)	a D	Spec. Cond.	Eh/ORP	Di 02	TURB	C-12: 24-	TODO	Water	
Read No.	Time (min.)	Rate	Temp (°C) (± 10%)	pH (± 0.1)	(25/1/1/4, ±3%)	(mV,±10mV)	Diss O2 (mg/L,±10%)	1	Salinity %	TDS G/L	Level (ft)	
	· · · · · · · ·	VANEUE	<u> </u>			E HE SEASON						
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	ADDAM COLORESPONDO PURA		28,8	10.24	92.3	-223	4.20	999			10.43	
PURC	INGY	LUES										
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### GROUNDWATER SAMPLE

WELL NO .: TW " 11-1

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e. g	- F	C** 5 1	zter Colur	• •	12,49	(ft) (a-c		~oo.	(c-a)		(11
	Wel			0.51		gal)	-)		Cor	nversion Fa	actors
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e.			Time: 09	:25	End Pu	ırge Time: 🔿	9:40		6	1.47	<del></del>
Read	Lapse Time	Purge Rate	Temp (°C)	pΗ	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level
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c.	Req	aired T	otal Purge	Volume (	1f x 2c) (gals.	); –			(2)	0.1	63	
d.	d. Total Volume and Number of Well Volumes Removed:									0.63	53	
e.	Begi		Time: \(\pi\)	40	End Pu	rge Time: \	7:25		6	1.47	70	
Read	Lapse Time	Purge Rate	Temp (°C)	pH	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level	
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			s) & Equip		w Flow T	<u> </u>	C PLIME			<del></del> -		
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San	npie An	atytical	Parameter:	s/Method	t: Benze	ne and Naphti	nalene via EPA	A Method 826	NR			
_				<b></b> .			·· <u>·</u>					
	iple Sta			<u>'5</u>		End Sampl						
	ID REA		s):		I.	YID/FID Mod	lel & Ionizati	on Potential				
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Project No.	****************		05-113		Client:	Internal Explosion Control Con-	Beaze	- East	*.	mental desiration (mi
Project Nan			th Cavale	cade	Project Lo	cation: Ho	uston, TX			
Weather Co	onditions	s: <u>S.m</u>	TRIY : C	35°F		Samp.	ling Date:	<u>_</u>	9/19	105
A SECTION OF A SILVER A	**	. DATA (m	ieasured	from top of it	*					-[
a. Dep						pth to Water:	******	11.45		(f
C Dep				· ·	-	tal Well Depti		24.7	<u> </u>	(ft
e. LNZ		ickness: Vater Colum	(a-b)		ft) f. DN (ft) (a-c	(APL Thickne	298:	(c-d)		(ft
g Len			2.09		(11) (a-c gal)	1)		Cor	nversion F	inctor:
2. WELL P			21011		,,			}	(axcf=1	,
14 A.C. 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 . 1 .	ge Metho		NJ FU	on : PER	STALTIC	France F		Well LD.		Fact, (cf)
		g Equipmen	at: H	loriba U-22				1	0.0	
	٠,	_		(1f x 2c) (gals.)				0	0.10	63
	•			Vell Volumes I		2 4 GA	1	4	0.65	53
<del></del>		Time: \3.	,15	End Pu	irge Time: [7	<u> </u>	7	6	1.47	<del></del>
Read Time	Purge Rate	Temp (°C)	pH	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Water Level
No. (min.)	7	(± 10%)	(± 0.1)	(m//m)		(mg/L,±10%)	1	%.	G/L	(ft).
AND THE ROLL										
TINH :	300my	25.2	7.78	74.8	- 25	8.5(	118		1972-1974	الداها
								70		
		25.0	7. LA	74.0	-14	1.13	0.0		_	11.63
2		25.2	7.52	74.	-3	0.00	0.0			11.65
3		1	7.46	74.4	4	0.00	0.0	-		11.65
4		24.9	7.43	74.5	7	0.00	0,0			11.65
5		1	1.49	75.2	6	D 00	0:0		~_	11.63
		25.3	7.58	1	4					
7		1	I		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.00	0.0			11-65
		25.3	7-163	1	4	2.00	0.0			11.45
8 4	- 7 ·	25.1	7.64	76.8	<u></u>		0,0		<u>`~</u>	11.65
	<del>  </del>	r								<del></del>
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3. SAMPLE	COLL	ECTION	DATA		Samı	pling Personn		P T	ひろだユ	· <del>····································</del>
		s) & Equip:		لزين 77 ترين	•	<del></del>		- <del> </del>	77-1	<b></b>
••		, Date, Tim	,	W. 52 60			<u> </u>		,	
-		Parameters				halene via EPA	A Method 820	50B		
	<i>y</i>						. <del></del>			<del></del>
Sample Sta	rt Time	:- <del>13-45</del>	13:5	<u> </u>	End Samp	leTime: \2:				
PID/FID REA			<u></u>			del & Ionizatio				

ODOR/SHEEN: COMMENTS: ENVIRONMENTAL INCORPORATED

### GROUNDWATER SAMPLE WELL NO.: MIN 10

REL	TOOTH OF		فالمستحدث والمستحدد	COLLECTI	ON RECO	RD PE	RMIT NO.:			
Project No	***	<u>;                                    </u>	05,113 %		_Client: 🚉	的翻译的主意	Beaze	r East -		
Project Na	me:	Sout	h Caval	<del> </del>	Project Loc	ation: Ho	uston, TX			
Weather C		: Din	NY ;	95°F	· · · · · · · · · · · · · · · · · · ·		ling Date:		9/18/01	5
1. WATEI	R'LEVEL	. DATA (m	easured	from top of i				٠.		
n. De	pth to LN	(APL:	. 12 14			oth to Water:		20.9	٠.	(ft)
	pth to DN					al Well Dept		47	43	(ft)
	APL Thi		(a-b)	·	•	APL Thickne	ess:	(c-d)		(ft)
	on the second of	ater Colun		26.53	(ft) (a-c	I) .		,	<del></del>	
	ll Volum		4.32	(§	gal)			Co	nversion F	
2. WELL I		`_		_	_				(axcf≕l	
	ge Metho			J. PERISTA	LTIC PUR	<u> 17</u>		Well I.D.		Fact. (cf)
		g Equipmen		oriba U-22					0.0	
				1f x 2c) (gals.			<del></del>	2	0.10	
				Vell Volumes		<u> </u>	v1 <del>31</del> .	4	0.6	
		Time: \\	. <u> </u>	End Pu	rge lime: \2	105	<del></del>	6	1.47	70 Water
Lapse Read Time	Rate	Temp (°C)	Hq	Spec. Cond.	Eh/ORP	Diss O2	TURB	Salinity	TDS	Level
No. (min.)	1	(± 10%).	(± 0.1)		1	(mg/L,±10%)		%	G/L	(ft)
PRE PURGE	Water 1					VIII 18 194				
	[3com/	1 25 8	STATE OF THE PARTY.	ZEZENEN GEFANNEN Z	- AUGUSTES		THE SHAP MAN (CANADA)	- Sales Confee	- Participative	157-15-1
INT 5			7.53	0.131	-139	2.63	12.9	-		21.33
PURGINGN	ATRIES									
		24,2	7.20	0.128	- 143	0.00	0.0	-		21.46
2   }		24:3	7.09	0.128	-143	0,00	<b>∞</b> . Ω		-	21.48
3		24,3	7.13	0.129	-148	0، ن	6.0	-	_	21.49
4		24.5	7.28	0.129	- 158	0,00	4.5		-	21.49
5		24.3	7.44	0,129	-166	0.00	7.4	1		21.50
(e		24.4	7.47	0.129	-168	0.10	7.9	-		21.50
7 4		74.4	7.49	0.129	-170	0 00	8,0		_	7-1.50
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. SAMPLI	E COLL	ECTION	DATA	<del></del>	Samo	ling Personn	el:	6.230		
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-	-	, Date, Tim Parameters		1-10:091			V X - d - = = 00.7	:00		
Sample Al	naryucal i	r arameters	лигетио	. penze	ne and Naphth	iajene via EPA	1 Method 976	UD		
Sample St	art Time:	17: 45			End Sampl	eTime: :		<del></del>		
ID/FID RE	<del></del>			Ţ	PID/FID Mod		n Potential		<del>-</del>	
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OMMENT										Į

## APPENDIX C CHAIN OF CUSTODY FORMS





# SEVERN STL

Severn Trent Laboratories, Inc.

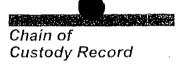
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Severn Trent Laboratories, Inc.

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SERVICES Severn Trent Laboratories, Inc.

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# Custody Record



SERVICES Severn Trent Laboratories, Inc.

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#### SERVICES Severn Trent Laboratories, Inc.

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